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FORTUNE

P&G REWRITES THE RULES OF MARKETING

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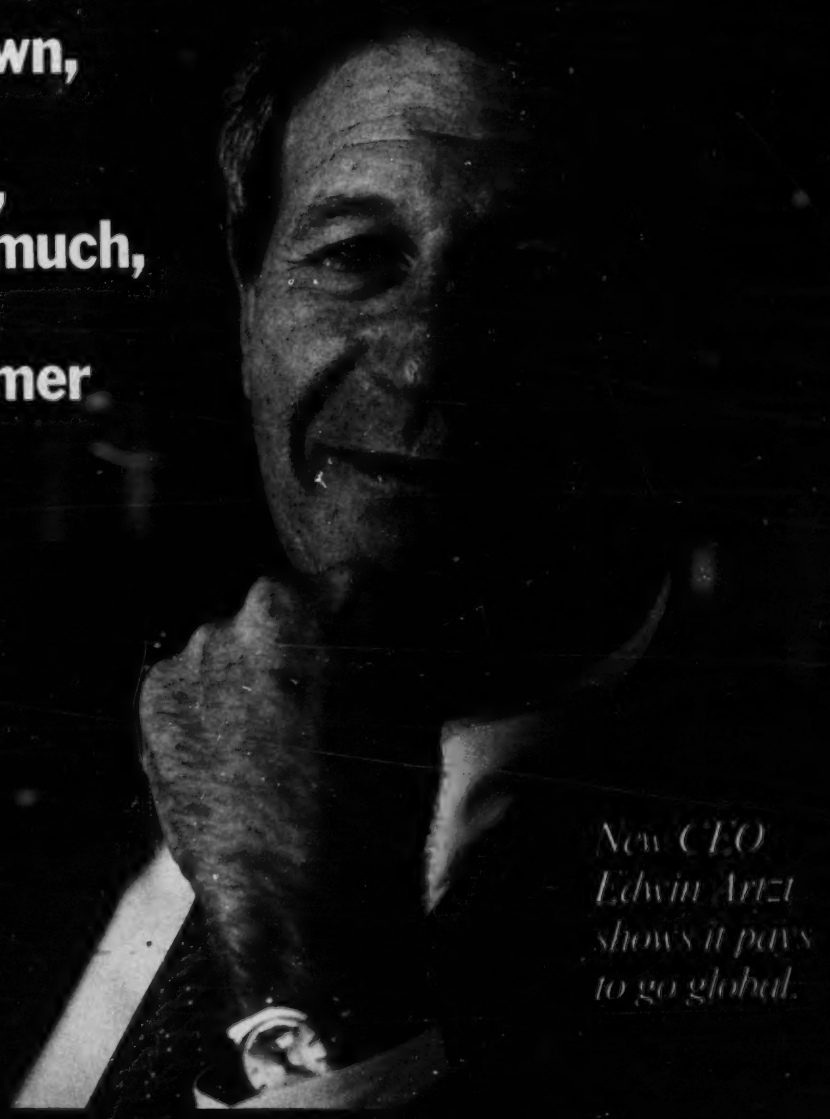

New CEO Edwin Artzt shows it pays to go global.

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EDITOR'S DESK

Brian Dumaine interviews P&G's new CEO Edwin Artzt.

AS WRITER Brian Dumaine was leaving Procter & Gamble headquarters in Cincinnati, a cab driver said, "I can tell that you don't work there." Asked Dumaine: "Why not?" He had carefully worn a gray suit, white shirt, and blue tie. Said the cabbie: "Your hair is too long."

Barbering may be the only thing that's not changing at P&G. Sensing that the company was embarked on a virtual revolution in the way it does business, Dumaine and reporter Susan Kuhn had been following P&G for weeks. So, naturally, Dumaine was in the audience at the annual meeting in Cincinnati when CEO John Smale announced his surprise retirement and the even more surprising selection of Edwin Artzt as his successor. Just minutes after the news broke, Dumaine landed the first exclusive interview with the new chief—an hour-and-a-half talk.

Edgar Smith in 1956

Dumaine found Artzt charmingly direct, with a good sense of humor and the sophistication of a truly global manager. Within the company, however, his aggressive style has some people worried. Our cover story, beginning on page 34, analyzes how P&G is rewriting the rules of marketing—rules that the company largely originated. Everything is being questioned, from its vaunted brand management system to the way it treats retailers. Says Julie Connelly, who edited the story: "It must be extremely hard for P&G's managers, who all grew up in the company, to say, 'Now we've got to do things differently.' "

P&G is Brian Dumaine's third cover this year. The others were "New Ideas for the 1990s" and "Today's Hottest Strategy: Speed." Says he: "Companies are in such tremendous flux that stories about managing are more exciting than ever. Executives face new questions and need answers."

They even have questions about business etiquette. For answers Dumaine took Judith Martin, better known as Miss Manners, to lunch, and his report on that is also in this issue (see page 155).

On October 10 FORTUNE lost an old friend, Edgar Smith, who died at 69. An expert in marketing and finance, Edgar was our assistant managing editor from 1952 to 1957. In his time, someone in the office kept a reference list of the 500 biggest American corporations. One day in 1955, Edgar asked, "Why don't we publish it? It won't be much trouble." (He was wrong about that, as the staff can attest.) Thus was born the FORTUNE 500, an institution known throughout the world. When we last looked, the phrase "FORTUNE 500" was appearing in print some 13,000 times a year.

Marshall Loeb

MANAGING EDITOR

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NOVEMBER 6, 1989

FORTUNE

ABOVE: A Japanese mother uses P&G's Pampers to change her baby. Photo by Caroline Parsons.

COVER: Procter & Gamble's CEO-to-be Edwin Artzt, photographed at company headquarters by Louis Psihoyos—Matrix.

"Procter is reinventing the packaged goods industry for the year 2000 and beyond."

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MANAGING / Cover Story

P&G REWRITES THE MARKETING RULES 34

Peerless promoter Procter & Gamble is making "watershed changes," says CEO John Smale. It is speeding decisions and getting closer to the customer. Smale's announcement that he will soon retire to be replaced by vice chairman Edwin Artzt is a stunning sign of P&G's commitment to the most radical restructuring in its 152-year history. *by Brian Dumaine*

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Victory-obsessed Edwin Artzt revived the foreign division—long P&G's Siberia.

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"I don't know where the individual investor is, but he should be in stocks. Now is a great time to buy."

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"No ambassadors, no courtiers. It's me and the president of an affiliate one on one."

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"Our government has done a poor job of negotiation on trade. We've got to get Japan to accept reciprocity."

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"Drexel just can't sell deals the way it used to."

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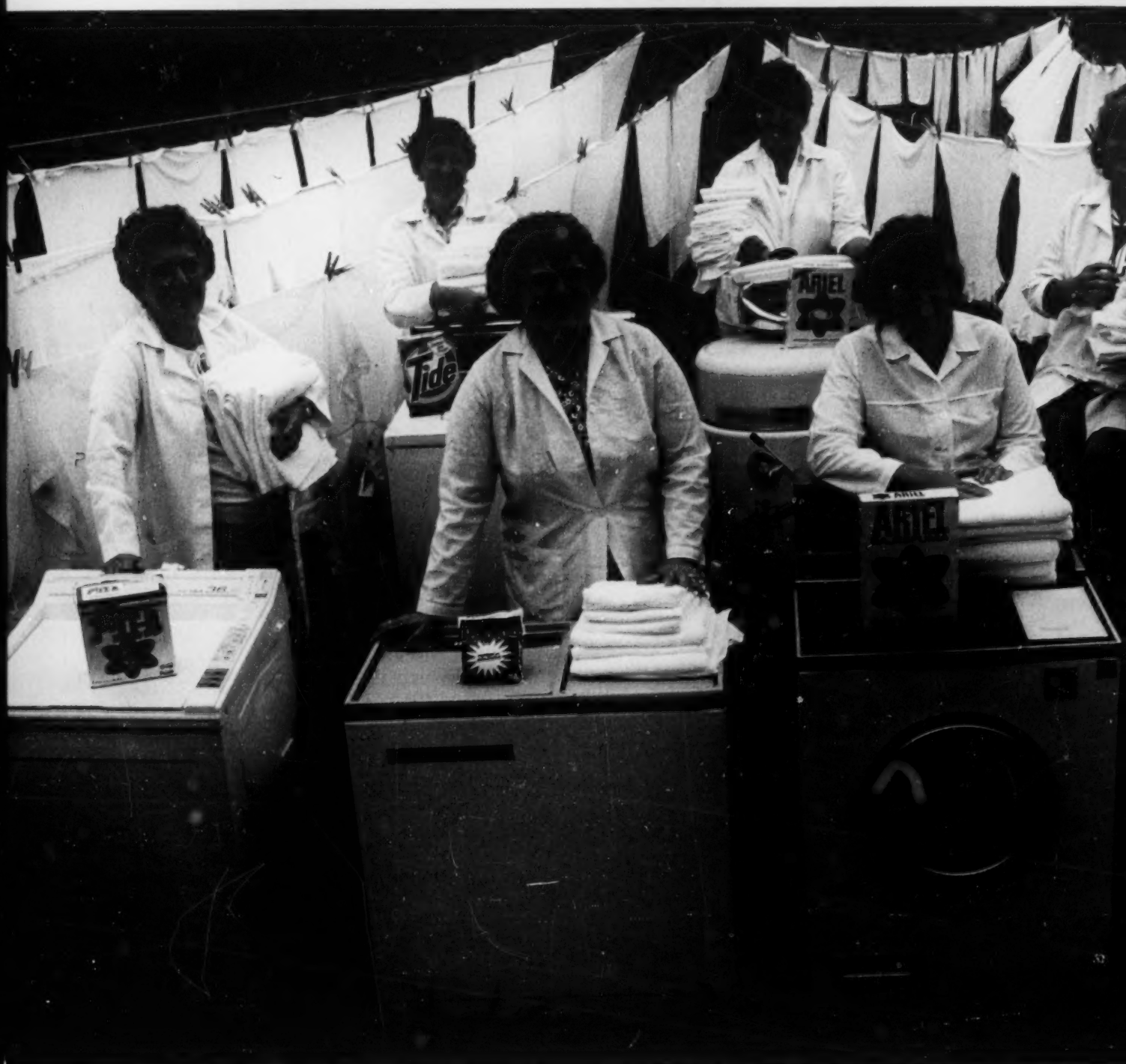
P&G REWRITES THE



Laundresses at the Cincinnati research center test P&G's detergents in waters and washing machines from such countries as Japan, Peru, Mexic

PHOTOGRAPH BY LOUIS PSIHOYOS—MATRIX

MARKETING RULES

d Venezuela, where the soaps are sold.

Procter & Gamble, once considered the corporate Kremlin, is pushing authority down, speeding decisions up, and getting much, much closer to the customer. ■ *by Brian Dumaine*

AS ANNUAL MEETINGS go, Procter & Gamble's promised to be pleasantly uneventful. Sales and profits were up; ditto the stock price and the outlook for the future. Even the animal-rights activists waving signs outside P&G's sleekly squat postmodern headquarters in Cincinnati seemed routine.

Which is why CEO John Smale's announcement a few minutes into the noon meeting that he was retiring at the end of the year to be replaced by vice chairman Edwin Artzt, 59, had the force of a grenade lobbed into the crowded auditorium. So impregnable is P&G that no word of Smale's plans had leaked beforehand. Indeed, a month earlier, the dark-haired, jowly 62-year-old had denied twice that he had any intention of stepping down.

P&G insiders took the appointment of Artzt as a sign that P&G was continuing with the most radical restructuring in its recent history. The man responsible for turning around Procter's international division, Artzt is known within the company for his aggressive style. Says he: "I feel most of the major things going on here have a lot of my blood and sweat already on them. I'm committed to the program, which is just about to blossom."

The transfer at the top shows that Smale, after overseeing two years of wrenching change, feels confident enough to let Artzt guide a new P&G through its completion. A *new* P&G? Yes. The peerless promoter that practically created modern marketing is re-creating it, profoundly altering the way consumer packaged goods are made and sold. Says Smale: "We've made watershed changes at P&G, the most significant changes since the Second World War. They will bear fruit well into the next decade."

More balderdash from the big office? Hardly. Listen to consultant John Luther of Marketing Corp. of America, an adviser to scores of consumer products companies: "Procter is reinventing the packaged goods industry for the year 2000 and beyond." In the process, the company is providing American business with a case study of how a large and bureaucratic organization can change internally without totally destroying the culture that made it great. Says Smale: "We're not ancestor worshippers,

STEVE RONKIN—BLACK STAR

Procter's electronic coupon system, Visions, helps supermarkets attract new customers.

but we do believe this company's culture is rooted very much in its past." Procter is taking the best of its past—a willingness to stay with long-term projects, job security, and a history of promotion from within—and grafting on to it a management style that calls for pushing authority down, speeding up decisions, and getting closer to the customer. Some examples:

■ P&G now treats retailers—once considered tough, penny-pinching adversaries—as partners and assigns special teams to help big customers like Wal-Mart and Kroger improve inventory, distribution, and sales promotion. (For more on how manufacturers are teaming up with their distributors, see Other Voices.)

■ Into its famous brand management system, P&G has inserted a new level, called category manager. The supra–brand manager has the spending power and decision-making authority to respond to fast-changing markets.

■ Another new position, the product supply manager, works with representatives from manufacturing, engineering, distribution, and purchasing to cut product development time. This middle-level manager has the authority to make decisions on the spot.

■ To crack overseas markets, P&G is going native, spending heavily to learn what consumers from Oslo to Osaka want.

Make no mistake: These are sweeping changes. In the first two years of restructuring, Procter has reorganized marketing, sales, manufacturing, and distribution. Bonuses are now based on individual performance rather than corporate results, and head count in the U.S. is down by 2,000, to 43,600. Over one-third of the company's top 20 managers have been replaced since 1984.

P&G KEEPS CHANGING ITS DIAPER BUSINESS

Pampers are best-sellers in Japan, where mothers change diapers frequently. The diaper on the Osaka tyke, lower left, is being filled with water in a P&G absorbency test. In St. Cloud, Minnesota, used Pampers are recycled into compost, which is sold to Christmas tree farms.

DRIVING the reorganization is Smale's long-term strategy to be the market leader in each of P&G's 39 product categories. So far the company, which makes such household names as Crest, Ivory soap, Head & Shoulders, Pampers, Tide, NyQuil, Pepto-Bismol, and Folgers coffee, is first in 22 categories, up from 17 four years ago. In September the company announced the $1.3 billion purchase of Noxell, the manufacturer of Noxema skin cream and Cover Girl makeup, which will make P&G the largest mass-marketer of cosmetics in the U.S. Says Smale: "The money is made by those manufacturers that have major share." Hercules Segalas, head of the consumer products group at Paine Webber, estimates that best-selling Crest, for instance, enjoys a 75% profit margin.

The reorganization has already produced some sprightly numbers. After a string of dismal years, earnings in fiscal 1989 (which ended in June) jumped 18% to $1.2 billion on sales of $21.4 billion. Unit volume growth, chugging along at 5% in 1985, is now rising at an average annual rate of 7%, a remarkable pace for a large company operating in mature markets.

Wall Street has not overlooked the new sparkle: Over the past year, P&G's stock has bubbled up 48% to a recent price of $120.75 a share. Says Morgan Stanley security analyst Brenda Lee Landry, who cites P&G's manageable debt, growing cash flow, and $1.6 billion in cash: "This large,

REPORTER ASSOCIATE *Susan E. Kuhn*

stodgy company has been revitalized."

True enough. But change has its costs, and the long, drawn-out variety may be the most expensive kind. P&G's process of stretching its reorganization over years has proved demoralizing for some employees and even customers. Says a manager of a grocery chain, who anxiously awaits some sign of the new, improved P&G: "We hear a lot about the focus on Wal-Mart, and we want to know more about it."

Because Smale has been streamlining the company by attrition rather than layoffs, pockets of hardheaded, change-resistant bureaucrats remain. In some divisions and departments, the mix of old and new management levels makes for unnecessary confusion. Reporting lines in sales, for instance, are particularly unclear. An ex-P&Ger observes: "It's a nightmare right now." Though the company claims turnover is low, a headhunter who says he used to get five or ten calls a week from P&G people is now getting 30. Says he: "They're losing some of their best and brightest."

The company's rigid adherence to gradual promotion from within has prevented it from solving pressing problems in the food and beverage businesses. In the infamous soft-cookie wars of the early 1980s, Procter's Duncan Hines division got burned by Nabisco. Orange Crush soft drinks never came close to the Coke and Pepsi league and were finally sold last spring. P&G remains reluctant to hire outside food and beverage experts. Says a former high-level employee: "The biggest hang-up is that they don't let a lot of light in the window."

Though P&G plays down the turmoil, the selection of Artzt suggests that the company may be stepping up the pace of reorganization. Says an ex-P&G manager: "I think Ed will look at plans and timetables and force people to move them up. He will also reduce head count." For example, in the early 1980s, Artzt cut P&G's British work force 13%.

In guiding P&G's restructuring to its conclusion, Artzt has an advantage that managers in similar situations should envy: supportive shareholders. Thanks to a century-old profit-sharing plan and a brand-new employee stock ownership program, current and retired employees control 28% of the shares. Not only do workers have a stake in making the reorganization a success, but so much control in presumably

WILL THE REAL VINCE LOMBARDI PLEASE STAND UP?

LOUIS PECHOUX—WIRE

Artzt: "Things are going to change."

A few days before Edwin Artzt was named CEO of Procter & Gamble last month, one of his colleagues snuck into his office and left a plaque on his desk: "It is not enough that I win; all others must lose." That sentiment, lifted from *The Leadership Secrets of Attila the Hun*, the book Artzt is currently reading, tells a lot about the competitive drive of the company's new leader. Says he: "Winning is the only result that matters. You have to establish benchmarks for yourself and then beat your own benchmarks."

That fierce will helped Artzt revive P&G's moribund overseas operations, the feat that earned him the top job. As head of the international division—historically P&G's Siberia—for the last nine years, Artzt restructured the businesses in Europe and Japan, creating an organization more finely tuned to the diverse needs of foreign customers. He faced up to the dirty work—shutting down soap and detergent factories, cutting headquarters staff, and redefining jobs. "I'm a wrecking crew," he admits. "That's my reputation. If it doesn't work right, I break it down and build it up again." In the process he built foreign sales by some $1.8 billion in five years.

In many ways Artzt is the quintessence of the global manager. He's on the road 60% to 70% of the time, carries a portable phone, and uses a dictaphone machine to send letters and memos by phone to headquarters. Late one night when he was transmitting the day's worth of memos to Cincinnati from his London hotel room, he fell asleep for three hours and woke up to a whopping phone bill. When he is in foreign cities, Artzt likes to jog as far as he can and then take a taxi back to his hotel, measuring his progress by the fare. Honolulu is an $8 run.

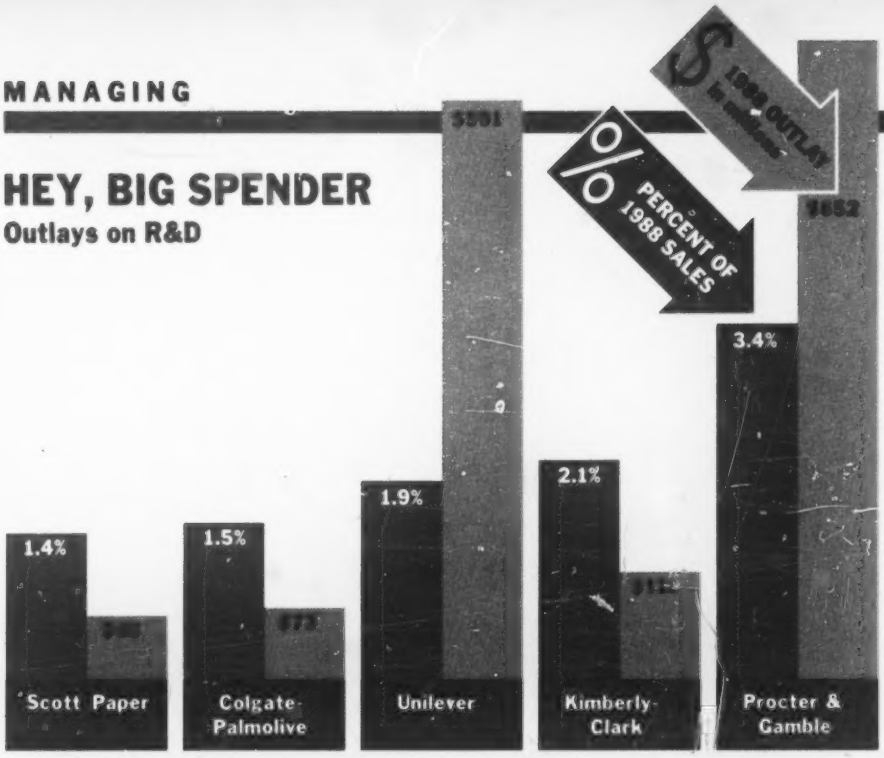
Artzt, who is married with five grown children, believes that his time on the road helps him understand businesses well enough to make quick decisions. He says, "I don't hold court. I go out and see how the operation is run. Then," tapping his pencil on his desk for emphasis, "I give everybody the opportunity for input, and—consensus or no consensus—off we go." Thus he earned the nickname the Prince of Darkness because, says an ex-division manager, "he has this way of coming in, making changes, and blowing out."

Like many successful P&G executives, Artzt's had his make-or-break opportunity early on. He was a 25-year-old brand manager for a new cleanser called Comet, and the launch, smack in the middle of the Christmas season, was going badly. Postmen, loaded down with parcels and cards, threw the Comet samples away instead of delivering them. When P&G's then-chairman Howard Morgens asked the young man what should be done, Artzt crisply advised him to try again in the spring. Relaunched a few months later, Comet became the nation's best-selling cleanser.

While some P&G Kremlinologists think Artzt, at 59, is merely keeping the CEO's seat warm for a few years—P&G's chiefs usually retire at 63—his is not a caretaker's personality. Says he: "It's too early to say what, but things are going to change around here." Is that a crane pulling up in Cincinnati, dangling the wrecker's ball?

HEY, BIG SPENDER

Outlays on R&D



friendly hands should discourage raiders.

Restructuring came to Cincinnati none too soon. In the mid-1980s, P&G's margins and earnings were eroding, and flagship products like Crest and Pampers were losing market share. The feeling among financial analysts and corporate customers was that P&G had become a corporate Kremlin: bureaucratic, risk averse, and arrogant. Says Leslie Dietzman, an executive vice president at Ames Department Stores and one of P&G's major customers: "It was do it P&G's way or hit the highway."

A manager at a large Midwestern supermarket chain, for instance, recalls how P&G once told him he would get his promotion money (funds the manufacturers give retailers to pay for special sales, coupons, and ad campaigns) only if he ran a two-column-inch newspaper ad on Tide. Recalls the retailer: "The P&G salesman would come into the store, measure the ad and say, 'Nope, it's only 1.9 inches, you won't get the money.' "

MANY COMPETITORS like Colgate-Palmolive and Campbell Soup were already restructuring, and Smale realized that if he didn't do some heavy lifting, P&G would be left behind. Turning over such a huge boulder would be a hard job, but Smale, a 37-year veteran with an almost encyclopedic knowledge of the company, was the right man. In 1954, when he was the brand manager for what was then a little-known toothpaste called Crest, he asked the American Dental Association to endorse it. Six years later they did, giving Crest a leg up on the competition that it has never lost. A high-ranking manager who recently left the company describes Smale as "a tough, pragmatic man with a great command of the business. He can keep his hands on a lot of balls."

Though pleasant in social settings, Smale is considered aloof by colleagues. His lieutenant John Pepper, the company's president, is much warmer, and P&G security analysts, employees, and former employees tabbed him as the next CEO. When Artzt got the call, the speculation was that Pepper, at 51, needed more seasoning—an opinion that was reinforced when he was made the head of international, Artzt's old territory. Nonetheless, he remains the heir apparent. Known as a listener and consensus builder, Pepper invites managers on the spur of the moment for informal lunches. He represents a new generation at P&G hip to the latest in management thought who toss around buzzwords like "self-directed" and "empowerment." Not that he's exactly Silicon Valley: Employees still talk about the time he worked Christmas day.

In the summer of 1987, the company began organizing its 4,000-strong sales force to do something pretty obvious: focus more on the customer—in this case, supermarkets and department stores. Under the old system P&G had 11 national sales forces, each hawking a product line such as detergents or foods. Retailers were faced with numerous P&G salesmen pushing 11 different product lines with all sorts of different promotions. For years P&G got away with this awkward system. Says Paine Webber's Segalas: "Retailers hated P&G, but they needed it. It dominated the trade."

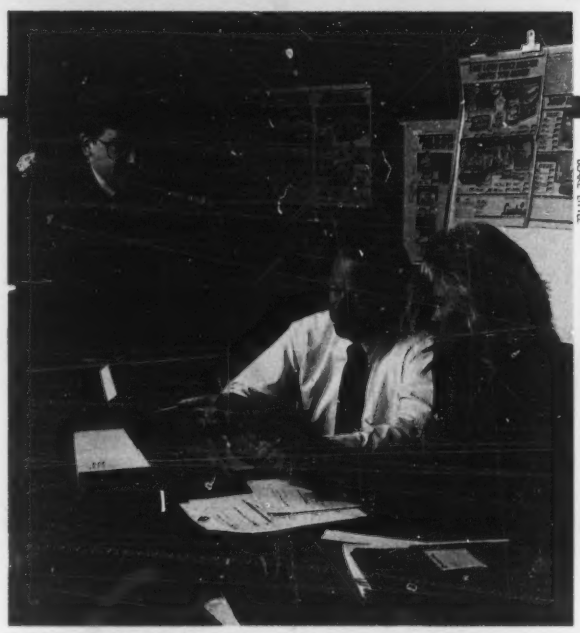
Then the balance of power shifted from big manufacturers like P&G to the retailers. What tipped the scales was consolidation among supermarket and drugstore

WHERE P&G IS NO. 1

LISA BOGDAN (11)

chains and the widespread use of scanners at the checkout counter. As a result of industry mergers, 100 chains now account for some 80% of P&G's U.S. grocery sales, vs. 15% about 20 years ago. Electronic bar coding helped retailers gather their own sales data. P&G could no longer bully its way into the stores, waving figures a retailer couldn't dispute that showed Tide was outselling All and was therefore entitled to more shelf space.

Slowly P&G realized that it would have to start fussing over these power-punching retailers. Says Mike Milligan, one of P&G's top sales executives: "We're switching from a product to a customer approach." Now teams of people from finance, distribution, manufacturing, and other functions are assigned to cover the big retailers. Says an executive at a large supermarket chain: "We can call the shots now. If we want to run a Duncan Hines ad, P&G has given its local sales managers the autonomy to say, 'We'll give you $20,000 for it.' "



BLAKE LITTLE

P&G reps show a Lucky Stores manager (center) a computer system that helps him keep track of orders.

A TEAM OF A DOZEN or so attends solely to the needs of Wal-Mart. Working with the crew from P&G, the discount giant has set up a just-in-time ordering and delivery system for Pampers and Luvs disposable diapers. When the diapers run low in a store, a computer sends an order by satellite to a P&G factory, which in turn automatically ships more diapers directly to the outlet. As a result, Wal-Mart can maintain smaller inventories and cut the number of times it runs out of Pampers. Says Smale: "This is what people refer to as a win-win situation. Our costs go lower and their costs go lower. Our objectives and the objectives of our customers are going to be much more aligned."

Here's another example of working with—rather than against—the retailers. P&G through a joint venture has installed a state-of-the-art checkout system called Visions in a Dahl's supermarket in Des Moines, Iowa. A Dahl's customer gets an electronic card that he inserts in a black box hooked to the register to call up his account. Let's say the customer buys Downy on sale. When the clerk scans the bottle of fabric softener, a color monitor at the counter shows a video of a woman holding Downy and purring, "You've saved 50 cents on Downy." That amount is deducted from the tab. Visions also automatically tallies points for certain products—50 for Downy. When the customer accrues enough points, he or she gets a prize, perhaps a watch (4,745 points) or a VCR (22,035). Not only is Visions attracting customers to Dahl's stores, but it is also giving both Dahl's and P&G valuable market data about consumer spending.

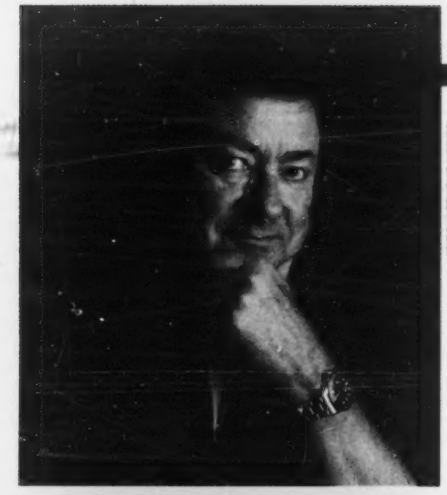
Once Smale tackled sales, he turned to the heart of P&G, the vaunted brand management system. The company doesn't know for sure how many brand managers it has—one inside source stopped counting at 92. Some shepherd $700-million or $800-million-a-year businesses. Only one of every three new hires makes it to brand manager, a process that usually takes four years. Those who do earn between $60,000 and $77,000. They are responsible for every aspect of their brands—marketing, advertising, sales, and development.

The rub: To get a major decision, brand managers often had to go through three or four layers of management. With up to 14 brand managers in each division, getting the attention of the division chief wasn't easy. One manager recalls waiting a year for an OK on a simple package design change. Another difficulty: Brand managers were so focused on a single product that they lost sight of the marketplace, even of what their colleagues were doing. Says one who left P&G: "The brand managers were butting heads. There was a lot of cannibalization. You'd issue coupons at the same time for P&G's liquid and powdered detergents."

That's why Smale, in late 1987, created the category management system, a move which promises to revolutionize consumer marketing much as brand management did nearly 60 years ago. He broke the company into 39 product categories and named 26 category managers (some have more than

WHERE P&G IS NO. 1 (Cont'd)

GOTZ LINZENMAIER (2)



LOUIS PSHOYOS-MATRI

BRAD MARTI

Retiring CEO Smale (top) tapped Pepper to take over the international division, considered his final stop en route to the top.

one category). Brand managers report to the category manager, who is like a small businessman. He has total profit-and-loss responsibility for an entire product line—all laundry detergents, for example, which would include such competing brands as Tide, Cheer, and Ivory Flakes.

The idea is to have someone who thinks in terms of product groups and who will make sure the brand managers aren't sabotaging each other. Now the brand managers can go directly to the category manager, who has the authority to make quick decisions and to back them up with as much as $1 million per project. Says Smale: "The creation of these category profit centers was really a continuation of the basic philosophy that small is good, that you bring focus to a specific business when you create a stand-alone operation."

Last year's severe drought in the Midwest put the new system to the test. The price of soybeans, a crucial ingredient in Puritan and Crisco oils, started to shoot up. What to do? Buy now or wait? Under the old system, says category manager Neil DeFeo, "We'd write a lengthy memo with exhibits and send it to senior management for agreement." Instead, DeFeo gave an OK on the spot to the purchasing agent to buy more soybeans and avoided a pounding on escalating prices.

Critics of the category management system say that P&G is moving in the right direction but not far enough or fast enough. For the most part the company has not eliminated any of the division vice presidents or other executives whose authority is being usurped by the category managers. Observes one ex-P&Ger: "You've got these vice presidents, all with their corporate jets, who make a lot of money and have been there forever. It's not easy to get rid of them."

WHEN HE LAUNCHES a new product or repositions an old one, the category manager forms a small team made up of the brand manager plus people from sales, finance, and manufacturing. Key to P&G's success here is another new position called the product supply manager, who reports to the category manager but has broad responsibility over every aspect of manufacturing, engineering, purchasing, and distribution. Says Smale: "I have the growing conviction that the product supply concept is perhaps the single most important thing that can influence our profit performance over the next several years." He estimates that the creation of product supply managers will slash costs by $1 billion over the next two years.

At the old P&G a brand manager would come up with a new concept for a product or package. The idea, usually traveling in memo form, would be tossed over the transom to engineering, then to manufacturing, and then maybe to distribution. Progress was slow and awkward.

The product supply manager has changed all that. This spring, for example, the category manager for dishwashing detergent wanted a new cap for liquid Cascade. Though the cap in use was childproof, it was also somewhat adultproof. The team got together, and the product supply manager, as its leader, was able to get everyone to work out all the cost, design, and manufacturing problems. The cap went into production without any glitches after only nine months, nearly twice as fast as under the old system.

One factory hand called up a customer who complained her angel cake didn't rise, and helped figure out why.

TO INSTILL a sense of what P&G calls "total quality," the company spreads tales like this one as well as other corporate heroics. In a war story making the rounds this fall, the company's Hatboro, Pennsylvania, plant was gearing up to launch a new children's NyQuil cough syrup in time for the winter cold season.

Just days before the line was to start rolling, the factory received from a supplier three million NyQuil boxes printed upside down. If the faulty boxes were run through the machine that inserted the bottles, the tops of the bottles would end up at the bottom of the boxes, and the packages would be unstable on the store shelves. Without enough time to bring in engineers or have new parts designed, two mechanics, George Rowan and Ed Scott, worked around the clock for three days, missing the plant's annual picnic. The pair came up with a system of springs and brushes that turned the boxes around and kept them open so NyQuil bottles could be inserted properly. Amen.

And how about this for getting *really* close to the customer? At the Duncan Hines angel food cake factory in Jackson, Tennessee, the line workers are given letters from customers who have problems with the product. One factory hand called up a customer whose angel food cake didn't rise, and helped figure out why by asking such questions as "How long did you beat the mix?" and "At what temperature did you bake it?" Says Smale: "What we've said to the workers is, this is the only place we make angel food cake, and you're responsible for it, and if you want to talk to the consumer, we'd like you to talk to the consumer."

The quality quest explains the $652 million P&G allocated to R&D in fiscal 1988. As a percent of sales, that amount represents half again as much as such competitors as Unilever and Colgate-Palmolive spend developing packaged goods (see chart). Even so, P&G has had few megahits since it launched disposable diapers in

the 1960s. But olestra, the fake fat now undergoing Food and Drug Administration testing, may be that long-awaited home run.

OLESTRA is sugar and vegetable oil chemically combined so that its molecule is too large for the stomach to digest; so it never enters the bloodstream, where it can clog arteries and veins. The body simply excretes it. Olestra rolls over the tongue much like fat but without the calories or cholesterol. It can be used to replace the silky consistency fat gives ice cream or to fry fat-free French fries, potato chips, and donuts. At Procter's R&D labs, this FORTUNE writer dined on steak with wine sauce, sauteed zucchini, and apple tart, all cooked in vegetable oil cut with olestra. The meal tasted just as good as food cooked in regular vegetable oil. Potato chips fried in olestra, however, flunked a blind taste test; they lacked the delightfully greasy aftertaste of the real thing.

The FDA is expected to rule on olestra's safety within the next two years. If approved for sale, olestra will likely be used initially as an additive in Crisco and Puritan vegetable oils. Nutritionists are concerned that if P&G marketed a 100% olestra product, some Americans would scarf down ice cream and French fries until scurvy got them. Estimates of how much money olestra will make for P&G range wildly. Some financial analysts believe the fake fat will add $1 billion to sales over the first few years; others a few hundred million. Even Smale can't guess, but he firmly believes olestra heralds a change in the American diet.

Want to know how P&G's restructuring will play out? Take a look at the international division. During his nine-year tenure as its head, Artzt helped P&G expand rapidly overseas. In 1986 the international business—P&G peddles its products in 140 foreign countries—represented 29% of sales; now it is 40%. Nearly 35% of earnings in fiscal 1989 came from offshore, up from 23% three years ago. In fiscal 1989 international's profits shot up 37% from the year earlier.

Feeding the growth spurt is P&G's entry into new business categories overseas, such as feminine protection products. Always is now marketed in the Far East, where it's called Whisper and is the biggest selling sanitary napkin in Japan. The acquisition of Richardson-Vicks, the maker of NyQuil cough syrup and Oil of Olay skin creams, has provided P&G with strong international distribution channels in Australia, New Zealand, Singapore, and Hong Kong. But perhaps the most important element in P&G's overseas success is its new willingness to go native, and nothing illustrates this better than the company's experience in Japan.

Smale predicts that—after 16 years of struggle—sales in Japan will top $1 billion in 1990. In the next three years Japan should replace West Germany as P&G's biggest foreign market. The key to cracking Japan: realizing that the company would have to fine-tune its "world products"—defined by P&G as the best you can buy anywhere—to the Japanese market.

A Camay ad showed a Japanese husband in the room as his wife was bathing. Japanese found it distasteful.

Not such a revelation, you say. Well, remember that P&G once truly believed its marketing prowess could ignore cultural differences. That attitude is changing. Says Artzt: "We need to develop the ability to deliver globally what we do well regionally. We have to adapt to overseas markets." For example, a Camay soap commercial showed a Japanese husband in the room while his wife was bathing, an invasion of privacy the Japanese found distasteful. After P&G switched to a more abstract commercial, sales improved.

In the early 1980s, P&G was getting soaked in the Japanese diaper market. After years of painstaking market research, the company finally realized that Japanese parents are very concerned with keeping their babies clean, and changed their kids' diapers far more often than Americans do. In response, P&G devised Ultra Pampers, a more absorbent diaper that keeps the tyke drier and makes frequent changing a less messy task. P&G also discovered that in land-starved Japan, shelf and closet space is almost as precious to housewives as their kids. It made the diapers thinner so the same number fit in a much smaller box. The popularity of the new diapers spread like a baby's rash, and today Ultra Pampers is the market leader.

P&G sells a total of 20 products in Japan, including Colac, the leading laxative. To keep the momentum going, in September the company announced a new $215 million R&D center to be built in Osaka Bay in the early 1990s.

The company has also made some inroads into the Japanese distribution system, whose arcane network of mom and pop wholesalers has frustrated many American firms. Procter's executives in Japan try to establish an unofficial partnership with the Japanese distributors the same way that the Japanese companies do, by showing a keen personal interest in their lives, inside and outside work. Not only do top executives help the distributors run their businesses, but they also hold elaborate lunches for the them and, in some cases, even attend their weddings and funerals.

WHAT'S TRULY AMAZING about P&G's historic restructuring is that it is a response to the consumer market, not the stock market. No raider has the company in his cross hairs—at least not yet. So P&G can rewrite the rules of marketing in its own deliberate way, continuing to pour money into R&D and toughing out a turnaround for businesses like Citrus Hill orange juice despite years of losses. After all, taking the long view paid off for Folgers coffee, which took 25 years to become the best-selling java in the U.S. A new management structure, a fresh global approach, an enduring corporate culture, and a commitment to the long term: Sounds like P&G is just about ready for the year 2000. ■

INVESTOR'S SNAPSHOT

PROCTER & GAMBLE

SALES (latest four quarters)	**$21.4 BILLION**
CHANGE FROM YEAR EARLIER	UP 10.7%
NET PROFIT	**$1.2 BILLION**
CHANGE	UP 18.2%
RETURN ON COMMON STOCKHOLDERS' EQUITY	**19.4%**
FIVE-YEAR AVERAGE	13.0%
STOCK PRICE RANGE (last 12 months)	**$78.625-$134.00**
RECENT SHARE PRICE	**$120.75***
PRICE/EARNINGS MULTIPLE	**17**
TOTAL RETURN TO INVESTORS (12 months to 10/13)	**52.7%**

*The stock will split two for one on 11/17/89.

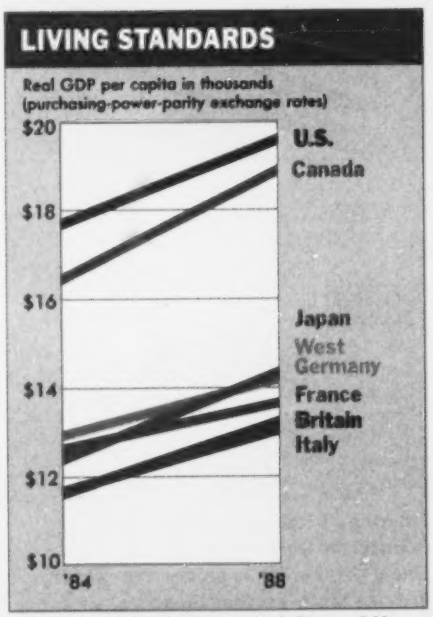
AMERICA'S PLACE IN WORLD COMPETITION

ts living standards are the highest anywhere and exports are robust again. But productivity is growing faster in other nations, and basic education is a disaster. ■ *by Brian O'Reilly*

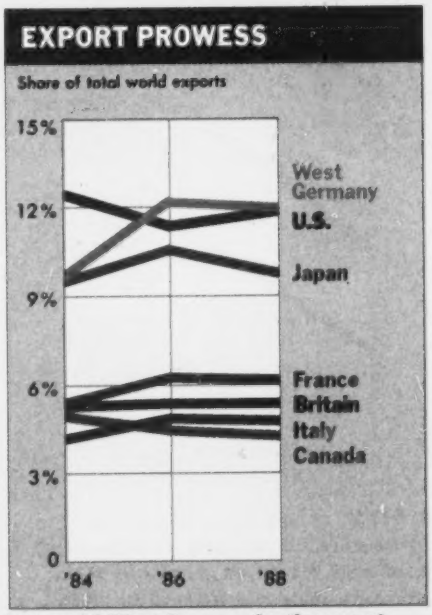
S THAT BUZZING in your ears cognitive dissonance? You know that America is entering an unprecedented eighth year of peacetime expansion, and you keep reading about—or are in the midst of—corporate upheavals designed to make U.S. business even more competitive. Yet gravely concerned economists keep telling you that America's productivity is flagging, its exports are lagging, and its standard of living is dropping behind that of other industrial powers. What's going on?

The charts on these pages cut through the hyperbole, an essential step in figuring out what is really right and wrong with the U.S. economy—and what must be done to improve it. By many key measures of performance, the U.S. is the world leader. But several underlying trends *are* disturbing.

Two measures sum up the good news about where America stands today: living standards and export strength. The best barometer of living standards is total output per person. Unlike consumption, which can be boosted temporarily by borrowing, output reflects a country's ability to sustain its consumption year after year. Americans are better off than anyone else. Other na-

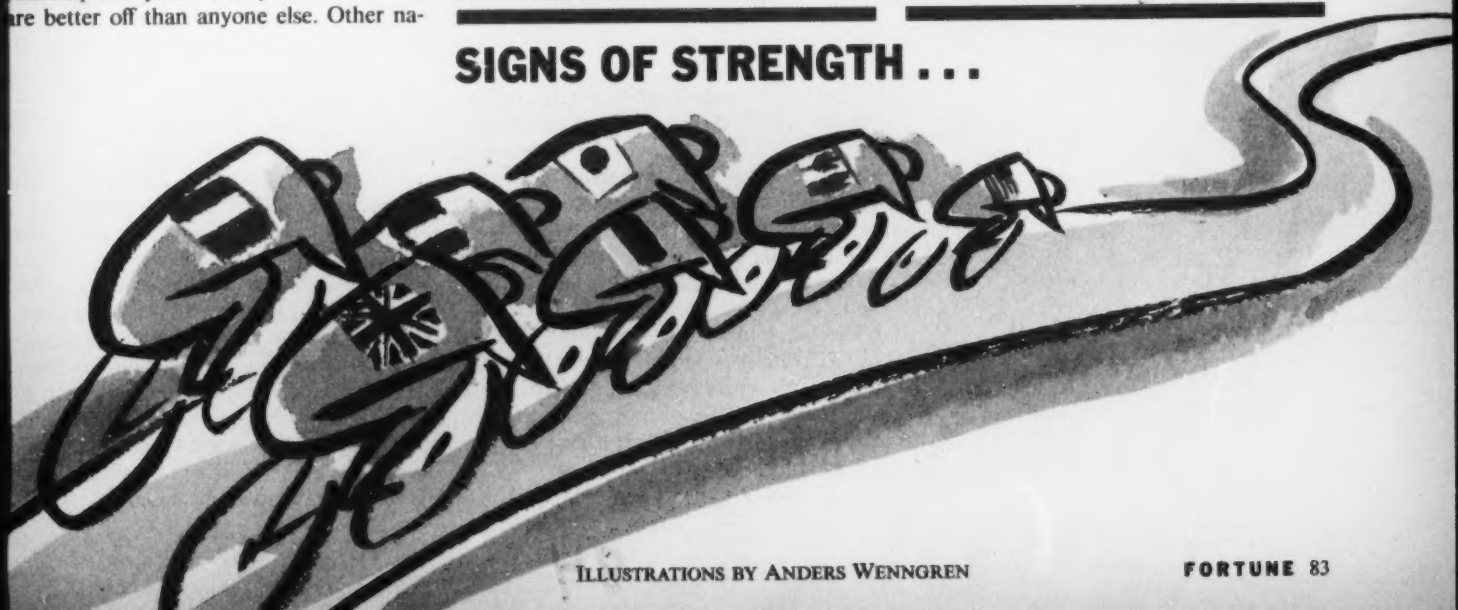


America still leads the rest of the world in gross domestic product per capita. The chart reflects dollars of comparable purchasing power in various countries.



Vying with West Germany for the export championship, the U.S. has recaptured lost ground. Its manufacturers have bounced back from the decade's earlier shocks.

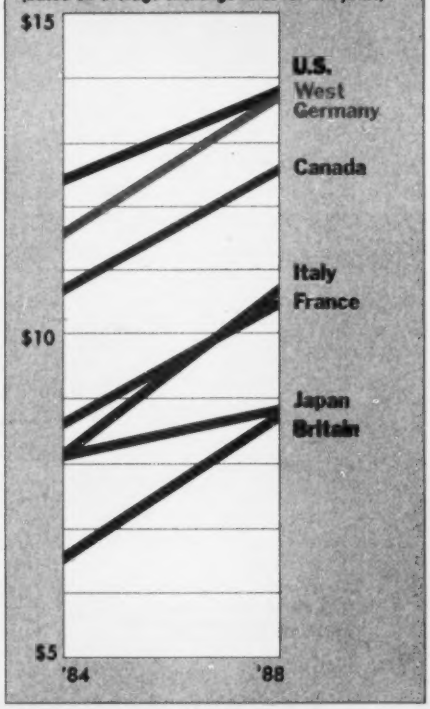
SIGNS OF STRENGTH . . .



ILLUSTRATIONS BY ANDERS WENNGREN

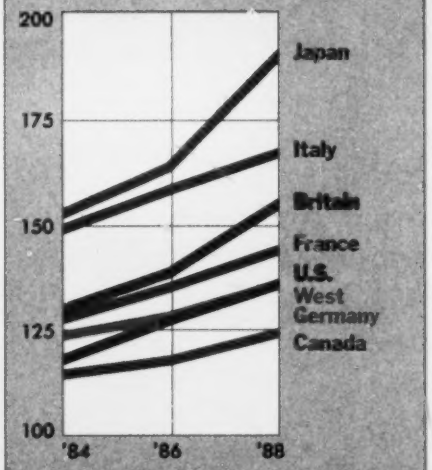
. . . AND PORTENTS OF WEAKNESS

FACTORY PAY



At $13.92 an hour, American factory workers are still the world's best paid, but just barely. Wages are growing faster in all other major countries save for Japan.

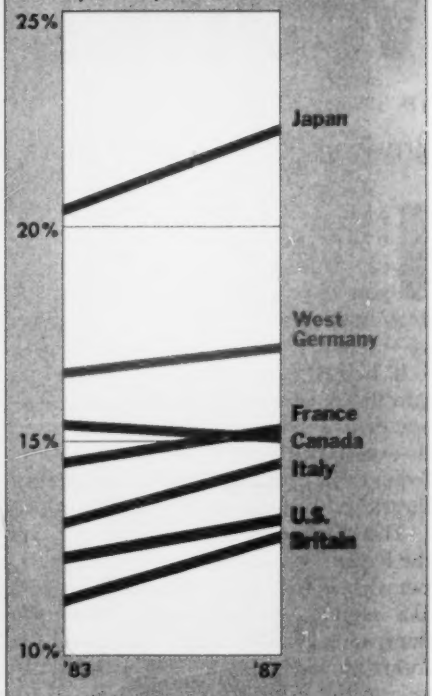
PRODUCTIVITY GROWTH



GDP PER EMPLOYED PERSON	1984	1988
U.S.	$39,249	$41,281
Canada	37,458	39,281
France	32,483	35,512
Italy	32,151	35,329
West Germany	31,456	33,695
Britain	27,332	29,771
Japan	26,181	29,678

America's output per employed person remains the world's highest. But staying ahead gets harder as productivity keeps growing faster in other countries.

CAPITAL INVESTMENT



Trailing the world capital spending surge, the U.S. invests less of its output on modernizing factories and offices than do most other major industrial nations.

tions are laboring hard to catch up, and more power to them. But America's growth is lethargic these days—and that is something to worry about.

Measured by its share of world exports, the U.S. is one of the world's top competitors. It has regained much of the ground it lost in the mid-1980s. The nation's foreign debt is still growing, however, and its current account deficit is improving only slowly.

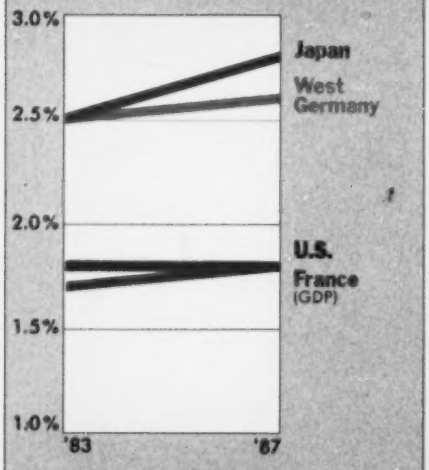
Productivity is the key to rising living standards. Taken together, American factories are the most productive in the world. Even the Japanese lag behind. Though manufacturing productivity growth in the U.S. has slowed somewhat in recent years after rebounding smartly from the laggard pace of the Seventies, it's still strong in historical terms. "The U.S. hasn't fallen down," says Gerald Godshaw of the WEFA Group economic consulting firm. "In the Eighties we are probably at the average of productivity growth for the last century."

But America can't ignore the pace other countries are setting with their investments in new factories, machinery, and R&D. In 1987, Japan plowed a stunning 22.3% of gross domestic product back into modernizing machinery, offices, and plants—far more than any other major industrial power. That was up almost two percentage points from 1983 and according to the Bureau of Labor Statistics came to about $6,000 per worker, vs. just $5,000 in the U.S. America's long-term trend may no longer be good enough.

Even excluding what the U.S. invests in military research, American R&D spending—$67.5 billion in 1987—dwarfs that of any other country. The trouble is that West Germany and Japan are spending a much

R&D SPENDING

Nonmilitary, as a percent of GNP

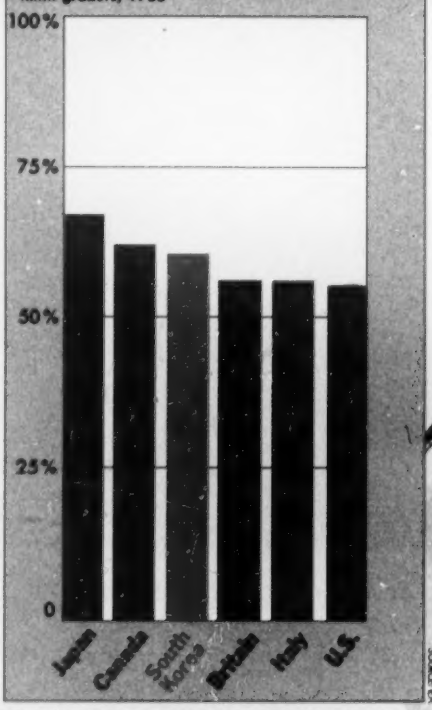


1987 NONMILITARY R&D in billions of U.S. dollars	
U.S.	$67.5
Japan	$38.8
West Germany	$18.4
France	$10.9

While America spends the most on R&D in absolute dollars, developing new products and processes is a higher priority in West Germany and Japan.

BASIC EDUCATION

Correct answers on science achievement test by ninth graders, 1986



SOURCE IEA

Standardized science tests given to ninth-graders in 17 countries show the U.S. lagging. Tied with Thailand and Singapore, it leads only Hong Kong and the Philippines.

higher proportion of GNP to develop new technologies and processes.

America's rivals may also be allocating their money more wisely. Nearly 70% of the nation's industrial R&D goes into inventing new products, and far less into refining mass-production techniques. By contrast, Japan devotes about two-thirds of its R&D to tinkering with manufacturing processes—figuring out how to make a zillion widgets cheaper or better. "The U.S. has been very good at coming out with splashy new products," says Edwin Mansfield, a University of Pennsylvania economist. "The Japanese are good at making incremental changes and reducing costs." That superiority helped Japan win the memory chip business, among others.

The dollar's decline since early 1985 has helped make America's manufacturing wages relatively more competitive. Compensation costs were 30% higher in West Germany than in the U.S. last year, and just 9% lower in Japan. Even if you reduce the effect of currency fluctuations by translating wages at the average exchange rate for the past five years, factory workers cost virtually the same in Germany as in America. The Italian and French are rapidly closing the gap—though the Japanese remain a bargain. The pay gains of workers abroad laudably boosted living standards there. By contrast, U.S. employees had only meager earnings growth over the past few years.

Perhaps most worrisome for the future is the poor education of students who will go to work in America's factories and offices. The U.S. devotes 6.8% of GDP to education, a larger share than any other major country. But standardized science and math tests given internationally to schoolchildren in recent years show the U.S. ranking among the worst of all countries tested. These results say more about a worker's ability to interpret a technical manual than mere literacy statistics. Impossible in a nation of so many Nobel Prize winners? "We serve our best students pretty well," says Alan Purves, head of IEA, the education group that ran one of the studies. "We really don't do well with a moderately large portion of the population."

America is clearly doing many things right, but not enough. It needs to save more—by cutting the federal deficit, among other things—so it can invest more. And it needs to make better use of what it does invest, whether in new machinery or in education. ■

REPORTER ASSOCIATE *Laurie Kretchmar*

THE CAPTAINS SEE A TILTED FIELD

In a new FORTUNE 500/CNN Moneyline Poll, America's top executives say global competition is getting less fair—but they can win without government help. ■ *by Brian O'Reilly*

IT SOUNDS LIKE good news: America is taking a growing share of the world's $2.7 trillion market for exported goods (see preceding story). But mention foreign competition to CEOs of FORTUNE 500 companies, the ones who are winning the battle, and they're far from ebullient. Yes, they believe U.S. companies are getting better at competing against their international rivals. But a growing number of CEOs are frustrated—either by foreign governments helping out their own industries or by U.S. policies that they say make the tough job of international competition even tougher.

These are among the findings of a recent FORTUNE 500/CNN Moneyline CEO Poll. Clark Martire & Bartolomeo, an opinion research firm, queried 213 CEOs of FORTUNE 500 and Service 500 companies between September 27 and October 5.

Asked if their companies were on a level playing field with foreign rivals, 57% of top executives said no. That represents a big jump from 17 months ago, when a FORTUNE 500/CNN Moneyline CEO Poll found that only 40% of corporate chiefs felt at an unfair disadvantage in international trade. No single incident seems to account for the rapid change in sentiment, although recent events—such as Sony's pending purchase of Columbia Pictures and foreign airlines' interest in U.S. carriers—may have magnified the sense of formidable competitors invading local turf. Great Western Financial chief James Montgomery notes another high-visibility trend: "Most of the buildings in downtown Los Angeles seem to be owned by foreign investors."

Certainly some companies have good reason for crying foul. Richard H. Ayers, chairman of Stanley Works, says, "We have a hard time selling tools in India, for instance, because of very high tariffs. But products from India can flow to the U.S. with little tariff burden. We should pressure countries to eliminate those barriers, or we should create our own."

Other companies face rivals with a different kind of advantage: subsidies. Dwayne O. Andreas, head of Archer Daniels Midland, finds it rough exporting grain, since commodities pouring into international markets are often heavily subsidized. "Every one of our competitors is a democratic, socialist, mercantile-managed economy," he says. "American companies are not competing with other companies but with the treasuries of other governments, and that's the problem."

Jack Rehm, president of media company Meredith (*Ladies Home Journal, Better Homes and Gardens*), worries about the growing number of American properties being bought by foreigners unburdened by U.S. accounting rules. They require a purchaser to put a ton of goodwill on the books in most mergers, then amortize it—resulting in an annual hit to earnings—for as long as 40 years. Says he: "As I see more foreign competitors than before, the perception I'm likely to have is that the playing field is less level." Merle Banta, chief of AM International, thinks U.S. companies must divert too much effort to keep America's own raiders at bay. Says he: "The own-

"Our government has done a very poor job of bilateral negotiation on trade."

EDWARD HENNESSY JR.
Allied-Signal

Q In the past five years, has the U.S. gained or lost ground against its major trading partners?

A
- Gained ground 69%
- Lost ground..... 28%
- Not sure..... 3%

Q Compared with five years ago, is foreign competition tougher?

A
- About the same... 37%
- Somewhat tougher..... 27%
- Much tougher..... 20%
- Not as tough..... 7%
- Does not apply..... 9%

Q Is your company on a level playing field with foreign competitors?

A
- No..... 57%
- Yes..... 31%
- Not sure..... 2%
- Does not apply.... 10%

Q Can U.S. companies compete globally on their own?

A
- Yes..... 59%
- No..... 37%
- Not sure..... 4%

ership structures of West German and Japanese companies provide better protection against takeovers. Therefore you don't have a lot of Carl Icahns and Boone Pickenses running around there."

Not everyone feels aggrieved. "As long as salaries and wages are about the same in developed countries with well-educated workers, it's a level playing field," says Paul Cook, chairman of Raychem, an electronics company that gets 60% of its revenues

"Most of the buildings in downtown L.A. seem to be owned by foreign investors."

JAMES MONTGOMERY
Great Western Financial

overseas. "If you accept that you have to have a local presence in these countries and can't just ship products from here, you can penetrate foreign markets."

Despite what some consider uphill battlefields, an overwhelming number of chief executives feel that new strategies and reorganizations undertaken by U.S. companies in the past few years have greatly strengthened America. Says Westmoreland Coal chief Pemberton Hutchinson: "We're exporting more coal than ever, for less than we did five years ago, and still making money." The dollar has weakened considerably in the past five years, and that makes his goods cheaper abroad, he points out. But Westmoreland is a better competitor today largely because of its own actions. The company cut senior management ranks by one-third and shifted some medical costs to salaried employees, enabling it to compete against subsidized foreign coal.

You'll have to look hard to find a CEO who thinks foreign rivals are slouching. Nearly half consider them better than they were five years ago, and almost everyone else believes the competition is as good as ever.

Which competitors will be most fearsome in the coming five years? These executives divide about evenly over whether to worry more about threats from the East or from the West. Japan was the No. 1 pick to be America's toughest rival, receiving far more mentions than West Germany, even though Germany accounted for a greater share of world exports last year than any other country. Altogether, however, nearly as many executives mentioned European countries as cited Asian ones. Many echoed the view of Ayers at Stanley Works: "Thailand, Malaysia, and mainland China will be a real threat as low-cost manufacturing regions. I have less concern about unified Europe being competitive. The risk is that unified Europe may close its borders and make it harder to sell products into their market."

Should the federal government take a more active role in helping Americans compete abroad? Most CEOs say no, and some say it emphatically. "Hands off," says Colgate-Palmolive chief Reuben Mark, whose company gets two-thirds of its revenues from foreign markets. Executives who favored government help were most likely to cite trade reform—specifically, opening closed markets and eliminating trade barriers. That's easier said than done, of course. Allied-Signal's Edward Hennessy Jr. roundly criticizes America's efforts to open foreign markets. "I think our government has done a very poor job of bilateral negotiation on trade," he says. "We've got to get Japan to accept reciprocity."

The CEOs also urged better cooperation between government and business. Like what? Valmont Industries makes irrigation systems in half a dozen countries, and CEO William Welsh II has no trouble providing examples where cooperation is better than in America. The French offer tax breaks to companies that install environmental controls, he says, while "in the U.S. they slap penalties on you and threaten to put you in jail" if you don't install them. Austria provides credit to foreign government customers, says Welsh, but he has to round up more expensive credit to pull off a similar deal from the U.S. His conclusion: "It's getting more difficult to be a U.S. producer operating in international markets."

John Croom, head of Columbia Gas System, thinks it may be time for the federal government to overhaul outmoded antitrust rules. "We've seen too much of the Rust Belt industries like steel move to the Far East, and they are never coming back," he says. "There may be a need in a global environment for more joint research or operations." But the only government help many executives want is what Tenneco chief James Ketelsen calls "indirect help." An example he cites: "We've got to improve the U.S. budget deficit so the country can operate with lower interest rates."

What is the CEOs' bottom line on foreign competition? The answer seems a distinctively American attitude toward competition of any kind: This isn't a fair fight, but we'd rather fight it on our own. We can win it that way. We are winning it. But we sure wish it were fair. ■

"The playing field is less level."

JACK REHM
Meredith

Q A **Which countries will be America's toughest new competitors over the next five years?**

Japan	42%
European countries (other than West Germany)	39%
Asian countries (other than Japan)	20%
West Germany	18%
Other	18%
Not sure	9%

Total exceeds 100% due to multiple responses.

Q A **Which government policies would most help U.S. business meet the challenge of global competition? (Responses from the 37% of CEOs who favor government help)**

Trade reform	51%
Greater cooperation between government and business	44%
Tax reform	24%
Subsidies	13%
Balanced budget	10%
Better education	6%
Lower interest rates	4%
Other	13%

Total exceeds 100% due to multiple responses.

INSIDE THE TIME-WARNER DEAL • SMART TV • INVESTORS' SURVIVAL KIT

VEMBER 20, 1989

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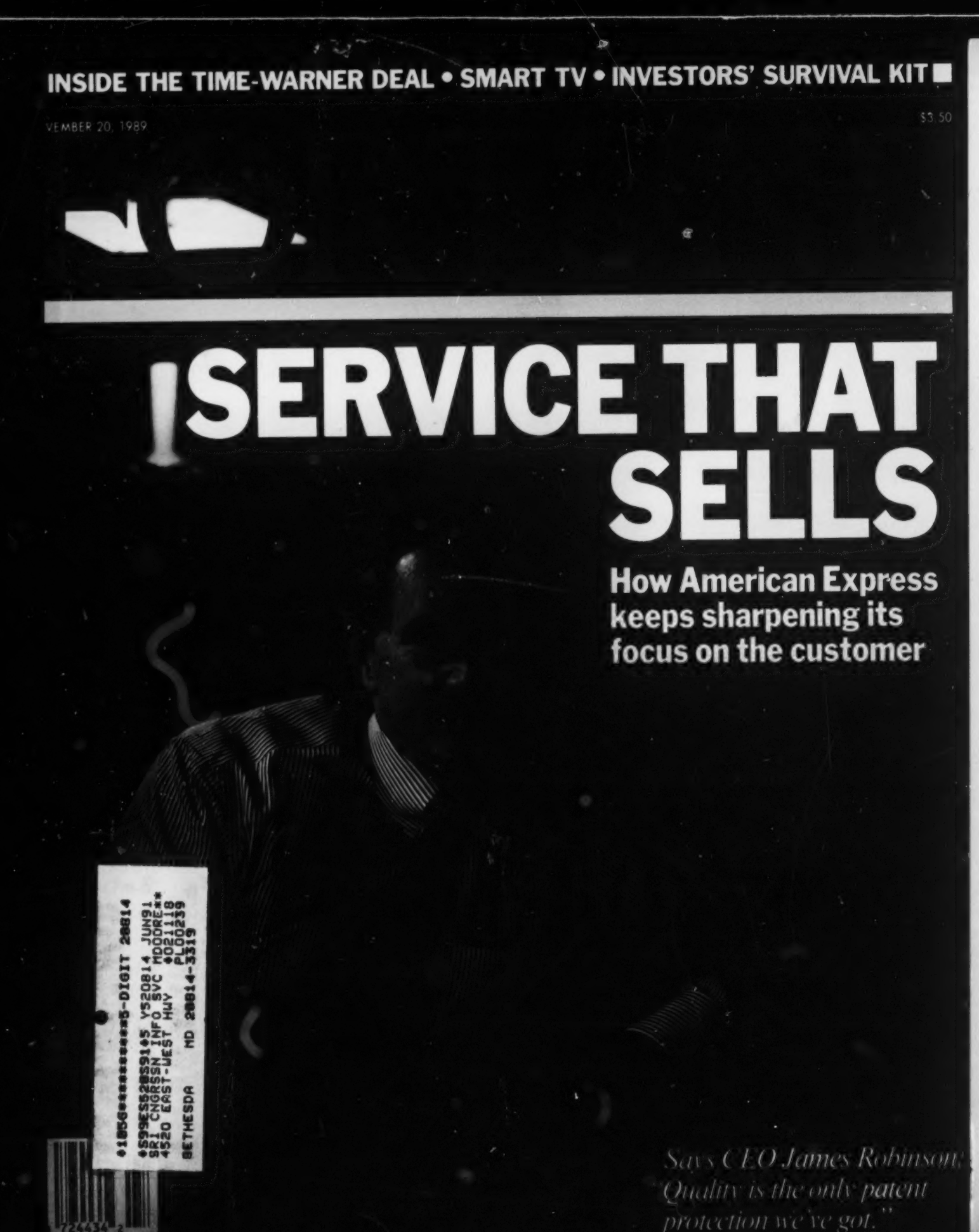
SERVICE THAT SELLS

How American Express keeps sharpening its focus on the customer



Says CEO James Robinson: "Quality is the only patent protection we've got."

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FORTUNE

Jim Robinson's horizons are expansive: "Our chief competitor is not Visa or MasterCard. It's cash."

PAGE 80

ABOVE: American Express CEO James D. Robinson III and wife Linda, with friend Ruby, photographed by Rob Kinmonth at their home in Connecticut.

COVER: Gregory Heisler captured Robinson at company headquarters in New York City.

MANAGING/Cover Story

AMERICAN EXPRESS: SERVICE THAT SELLS 80

American Express has waxed mightily by delivering exemplary service to cardholders. In the process the company has compiled revealing records of the spending habits of its customers. Now the company uses that knowledge to market new products. Would you like some mutual funds? Or diamonds perhaps? How about an exercise video called *Buns of Steel*? Here's how Amexco does it. *by John Paul Newport Jr.*

THE PERFECT POWER COUPLE'S PERFECT POWER MARRIAGE 86

Some people will swear that two chief executive officers can't coexist under the same roof for long. But if the two CEOs are deeply in love, like Jim and Linda Robinson, anything is possible.

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The Dow's violent drops have provided a jolting tutorial in the new ways of Wall Street. Among what we can learn: Volatility is here to stay. But circuit breakers help. *by John J. Curran*

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HOW SAFEWAY COPED WITH THE QUAKE 101

The supermarket chain pulled through on the strength of clear thinking, good communications, and solid roots—assets that could benefit any company in an emergency. *by Gary Hector*

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The executives at Schwab drew up a disaster plan just months before the quake. It sure came in handy, and next time they will do even better.

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When Toro, the snow blower company, branched into summer equipment like lawn mowers, earnings really thawed out. *by Sandra L. Kirsch*

Also: Concept, Sierra On-Line, and Autoclave Engineers.

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COUCH POTATOES! NOW IT'S SMART TV 111

The union of television's images and personal computers' brains is giving birth to dazzling offspring that could revolutionize both industries. Even IBM is tuning in. *by Brenton R. Schlender*

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"We wanted to help America reinvent the consumer electronics business, and they treat us like donkeys."

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"The kids can come out and play now. Before there was shooting at night and there was shooting during the day."

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"The industry criticized us for 19 years. Now Tiffany is trying to do things the Cartier way."

PAGE 141

"You can't teach us anything about the theory of science. And we have the Bolshoi."

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"It was damned controversial. If you ran a board vote on it, it would have failed."

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"Japan is a rigged market. If you don't believe that, you're living on another planet."

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With strong support from the leaders of Chicago's private sector, a real estate millionaire toils to clean up nasty projects. *by Ronald Henkoff*

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To put some steel into 1992, the Europeans are building a network of tunnels, bridges, and high-speed railways. The train under the Channel will take less than 20 minutes. *by Shawn Tully*

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Soviet managers attend a U.S. business school. They flub accounting, shine in strategy, and learn a lot off campus. *by Colin Leinster*

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The year's fiercest takeover tangle sparked elation, despair, fury, and accusations in three boardrooms and the Delaware courts before finally reaching a surprising conclusion. Here's what happened. *by Bill Saporito*

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EDITOR'S DESK

ROB KINMONTH

Newport with Jim Robinson at home in Connecticut

WITH ALL THE TALK about America's transformation into a service economy, many a disgusted consumer, sick of standing in lines, is beginning to grumble: "Where's the service?" What's missing, says James D. Robinson III, the energetic chairman of American Express, is a focus on quality—a word he uses all the time, particularly with coworkers. Robinson's company is the subject of the cover story beginning on page 80, "Service That Sells," and he knows whereof he speaks. One top analyst of the credit card business ranks American Express's service "incomparable."

NINA BARNETT

Bill Saporito

In snaring the story on how American Express keeps improving its hold on customers—and how it uses what it knows to sell them more products—associate editor John Paul Newport and reporter Julianne Slovak learned that a long wait can pay off. In September, following six months of on-and-off negotiations, Robinson threw open the door. Newport tagged along with him to staff meetings and luncheons, accompanied him on a trip to Chicago, and spent an afternoon at his Connecticut farm. Says the writer: "That a man in a job like that could find ten hours to be interviewed made me reassess my own time-management skills." To the contrary, Newport's time with Robinson was wisely spent—and yours will be too.

I also commend to you the remarkable article on page 164, "The Inside Story of Time Warner." It is an engrossing account of the year's fiercest takeover tangle, one that, as author Bill Saporito writes, "provoked tremendous controversy and touched every bare-wire business issue of the age: long-term vs. short-term value, shareholder rights, the significance of corporate culture, executive compensation, business ethics, management practice, and merger and acquisition tactics." Because it did all that, we gave it more space than we have any other recent article.

Time Warner is, of course, the parent of FORTUNE's publisher. We treated this story as we do any story: with tough and detailed reporting, fairness, and balance. Writer Saporito, a member of FORTUNE's board of editors, spent months interviewing almost all the principals and studying 12,000 pages of depositions and sworn affidavits. He is a veteran of this sort of thing, having earlier written the 12-page inside story on "How Ross Johnson Blew the Buyout" (April 24). Geoffrey Colvin edited and reporters Rosalind Berlin, Darienne Dennis, and Bill Sheeline assisted. I think you will find their account particularly insightful, useful, and readable.

Marshall Loeb

MANAGING EDITOR

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BY VIVIAN BROWNSTEIN

INCREDIBLE BUT TRUE: THE BUDGET DEFICIT WILL SHRINK

OVERVIEW

- **The deficit as a percent of GNP will be the smallest since 1979.**
- **The economy will grow about 2.5% next year.**
- **Higher inflation in 1990 will complicate budget cutting.**

■ Ah, budget time in the nation's capital. The usual games, tricks, deceits, procrastinations. But not so usual is the rough discipline of the Gramm-Rudman-Hollings sequester—in effect since Congress let the October 16 deadline for hammering out decisions pass—which cuts into government spending at a $16 billion annual rate. As the arguing continues, so do the constraints, which are more severe than anyone in Congress has proposed. The difference may yet get spent—but then again, it may not. The two houses are still far from agreeing on enough reduction in outlays and increase in revenues to comply with the law they imposed on themselves.

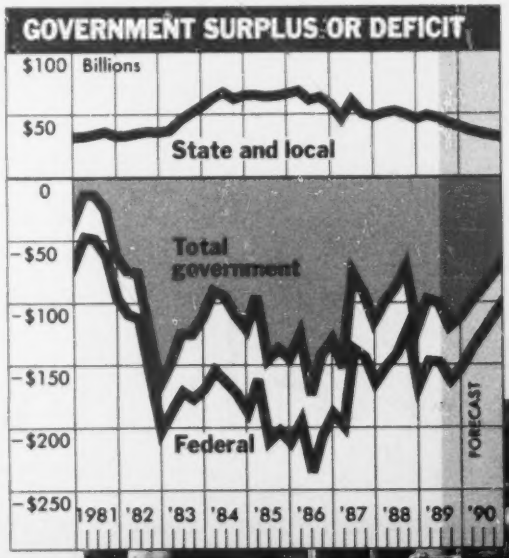
Either way, the big news is that fiscal 1990 is shaping up as a year of genuine progress toward getting the federal deficit under control. If that's hard to believe, blame the maddening chicanery that Washington uses to make the deficit calculations look better than they really are. How—a rational citizen must ask—can any good come of a process so dishonest?

Take the thrift bailout. Of the $50 billion the Administration thinks will be needed to close or merge currently insolvent S&Ls in this and the next fiscal year, $30 billion is "off budget." The funds will be borrowed by the Resolution Funding Corp. (RefCorp), a new government-sponsored "enterprise" concocted for the purpose. Money raised by such enterprises is not technically federal borrowing. But the funds will be turned over to the government and counted as collections, in turn offsetting what the government spends to take care of insolvent S&Ls. And taxpayers will pay a major part of the interest on the borrowing, which will carry a slightly higher rate than ordinary government bonds.

Other gimmicks to meet GRH targets are on a smaller scale, but no less devious. The proposal to move the postal service off budget will save $1.8 billion this fiscal year, and sales of government-owned assets will raise $5.7 billion. In addition, funds appropriated to help California recover from the earthquake's devastation and South Carolina repair Hugo's damage are not likely to be counted as far as the GRH targets are concerned.

And yet. Despite the recurring sordid games and missed targets, the deficit is considerably smaller than at its worst in 1986, and FORTUNE expects more shrinking this year (see chart). On a fiscal year basis, the deficit will drop to an estimated $135 billion from the $152 billion registered for fiscal 1989. At 2.5% of GNP, that would be the smallest deficit since 1979 in relation to the size of the economy. Most important, not all the improvement comes from fancy accounting footwork. Increases in federal spending have slowed markedly. Spending last year was almost $100 billion less than it would have been under pre-1986 policies. And the increase in total 1990 outlays will just about match inflation.

Squeezed hardest is the so-called discretionary half of the budget, which consists mainly of outlays for defense and direct purchases for nondefense purposes. It will be compressed by 2% in real terms. If the automatic spending limits are left in place, the cuts will be larger than we have pro-



CHIEF ECONOMIST *Todd May Jr.*
SENIOR ECONOMIST *Vivian Brownstein*
RESEARCH ASSOCIATES *Lenore Schiff and Lorraine Carson*
FORTUNE's forecast is produced by this magazine's economists using our own economic model.

Construction like this New Jersey recycling plant will nibble at state and local surpluses, adding to the total government deficit.

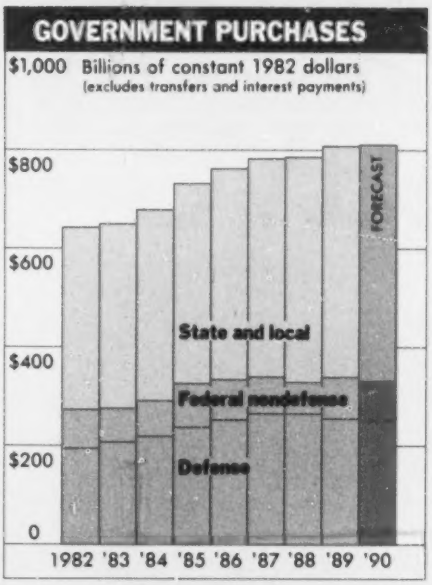
PHOTOGRAPH BY NICK KELSH

jected—a prospect that is increasingly likely the longer the disagreements go on. The $16 billion that must be carved away under sequester is based on calculations by the Office of Management and Budget.

The sequester mechanism assumes that all the deficit reduction will come from lower spending instead of the combination of revenue-raising measures and spending cuts envisioned by the Senate. Instead of a $5 billion trimming, defense will take an $8 billion hit. And unless President Bush gets congressional approval for flexibility in making military cuts, the Army will have to cut its payroll by $1 billion. R&D, including spending for the Strategic Defense Initiative, would lose $200 million that the Administration might rather see spent. Still, OMB director Richard Darman has let it be known that he would just as soon make the automatic spending freeze permanent.

Looking at the fundamentals, sustained economic growth has played a large role in keeping the deficit from ballooning in the past several years. As the unemployment rate sank to its lowest in 15 years, smaller compensation payments helped hold outlays down. But the big bucks came from revenues. Healthy profits and incomes kept tax receipts growing at a fast clip, and larger payrolls fattened Social Security coffers.

One way to see the impact of fast growth is to make a cyclically adjusted calculation comparing actual revenues with those that would have been collected had GNP grown smoothly at its long-run potential of about 2.5% per year. The 3.5% actual average growth of the past four years of recovery generated some $60 billion extra for the feds.



Government won't contribute much to GNP growth next year. Total purchases and payrolls will barely outpace inflation.

That bonus is petering out. Now that the economy has moved back to virtually full employment, it won't keep growing faster than its long-run potential. Real GNP growth has already slowed to a 2.5% annual rate in the second and third quarters, about the average likely for 1990. So budget makers can't count on any more tax dividend. Instead, FORTUNE is assuming the Administration will accede to a modest increase in taxes, on the order of the $5 billion in the Senate budget proposal. Most likely are gasoline and other excise taxes, but the Senate has not made specific suggestions yet. Together with the scheduled January 1 rise in Social Security taxes, that should be enough to increase revenues 8% this year, about as much as in fiscal 1989.

State and local governments are once again moving in a different direction from Washington. The surpluses they built during the years the federal deficit lunged upward are now declining. These surpluses, which totaled $65 billion four years ago, currently amount to some $45 billion and will shrink another $15 billion during 1990.

Like the feds, the states and municipalities need more revenue. Many counties and cities as well as more than half the states have raised taxes during the past year. Outlays will continue to grow faster than receipts, mainly because of the prolonged boom in public works. Projects for new classrooms and community centers as well as sewer facilities, recycling plants, and the like will keep spending up for at least another year. Nevertheless, since these projects are usually financed with borrowing, they won't put many states and localities into budgetary binds. Other outlays can continue to increase along with tax receipts.

Meantime, Washington will muddle through. As the table below shows, the gap between the Gramm-Rudman deficit targets and the deficit will widen again in fiscal 1990. Never mind Darman's estimate that $16 billion will bring the deficit down to the required $100 billion. When it turns out that he undershot the mark, as FORTUNE and many others expect, no one will throw him in jail. It is perfectly legal for the deficit to be over target; you just have to *forecast* that it will come within range.

THE MAIN POINT to keep in mind is that whether by sequester or congressional compromise, America this year will be getting about all the budget cutting it can stand during a period of tepid economic growth. The rise in state and local outlays will offset some of the damping effect of the federal clampdown—which might prove important in keeping the expansion from faltering. But the drop in the cyclically adjusted deficit economists use to measure the budget's economic impact will be as large this year as in 1986, when Gramm-Rudman went into effect. Since the economy was booming then, the drag was hardly noticeable. This time it will be felt.

The budget-cutting game will get much dicier next year. The improvement in the deficit will not ward off a rise in interest rates, since the Federal Reserve will have to tighten as inflation accelerates to the 5.5% that FORTUNE expects for 1990. On our projection, the deficit will have to be cut in half to meet the $64 billion target for fiscal 1991. Any plan for doing that will require much more of a cut than $16 billion, even under the rosiest of scenarios—and much more than the economy could handle. Count on the gap between the proposals and reality to yawn wider than ever. F

GRAMM-RUDMAN-HOLLINGS: MISSING THE TARGETS

FISCAL YEAR	ORIGINAL TARGETS In billions	REVISED TARGETS In billions	ACTUAL DEFICIT In billions	AMOUNT OVERSPENT In billions
1988	–$171		–$221	$50
1987	–$144	–$144	–$150	$6
1988	–$108	–$144	–$155	$11
1989	–$72	–$136	–$152	$16
1990	–$36	–$100	proj. –$135	proj. $35
1991	0	–$64		
1992		–$28		
1993		0		

The gap between Gramm-Rudman and reality will widen again this year, making the next target even more unattainable.

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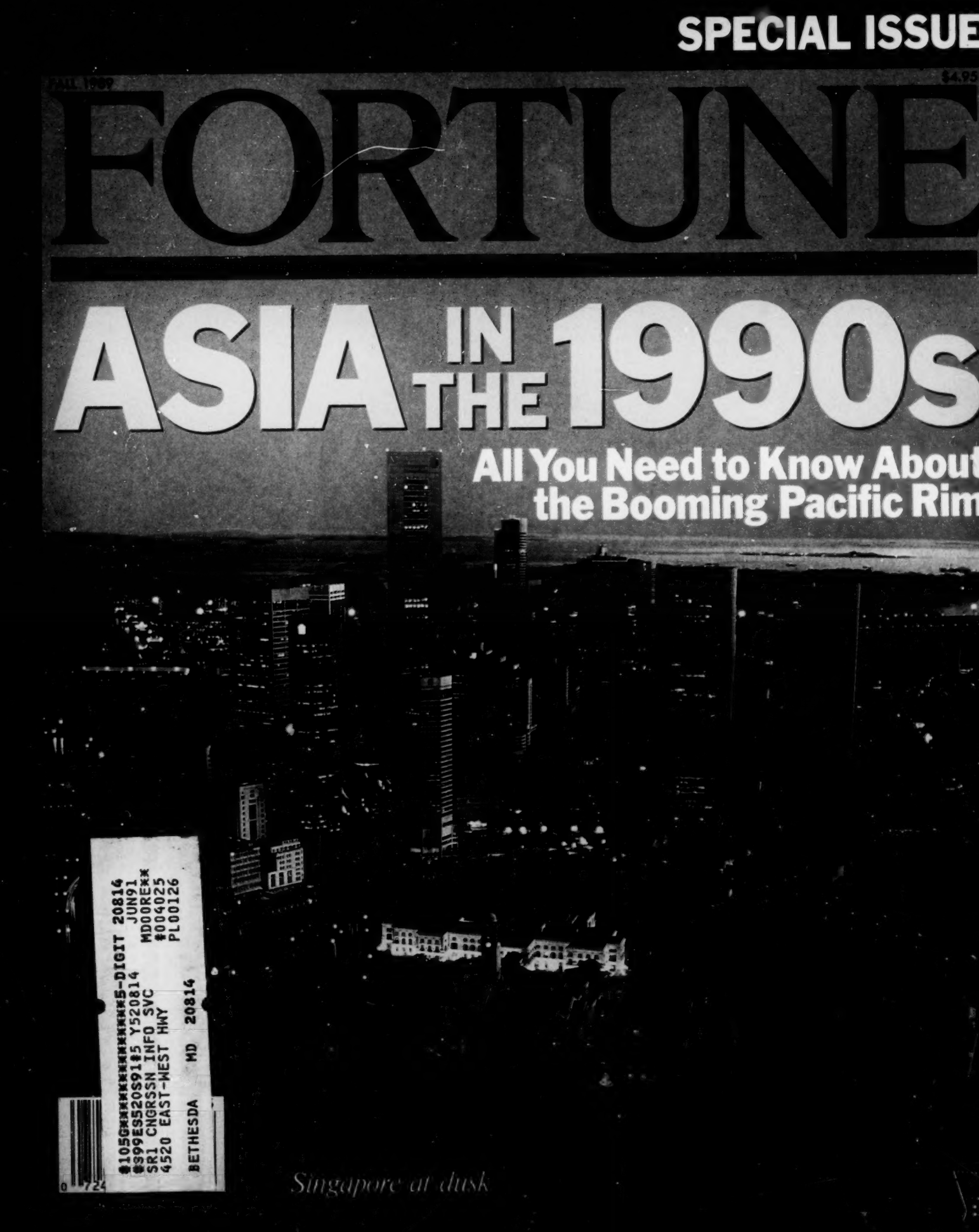
ASIA IN THE 1990s

All You Need to Know About the Booming Pacific Rim



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Singapore at dusk

FALL 1989

FORTUNE

ABOVE: At the Yong-in amusement park near Seoul, owned by Samsung, young Korean girls pause after performing a traditional dance. Photograph by Paul Chesley—Aspen.

COVER: Heimo Aga of Contact Press Images photographed Singapore aglitter at sunset.

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As hard-liners and less-hard-liners struggle for political control, the economy seems headed for trouble. But Western investors are still betting on the long term. *by Ford S. Worthy*

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Critics complain that the conglomerates known as *chaebol* are too powerful. Labor has turned militant, and the won's surge against the dollar is hurting. But these powerhouses, still controlled by founding families, go right on honing the Korean export edge. *by Louis Kraar*

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The best that can be said for Vietnam, Laos, and Cambodia is that they have nowhere to go but up.

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Can Australia and New Zealand compete with the Asian sprinters? They're both trying. The Kiwis, who have deregulated their economy and exposed it to international competition, are ahead of the laid-back Aussies. *by Louis Kraar*

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Powered by a cascade of cash from bulging trade surpluses, shares on Asia's exchanges are behaving like runaway bulls. But the gains aren't always easy to rope in. Here's an investor's guide to the mysterious East. *by John J. Curran*

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From Singapore to Bangkok, you have many more choices than you used to. Yesterday's big borrowers need other services today. Look hard at local institutions, not just for contacts but for expertise. Still, no bank in Asia has quite the breadth of Citicorp. *by Ford S. Worthy*

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Wear conservative suits and clean socks. Be punctual and polite. Avoid backslapping, head patting, and "night duck" soup. But be prepared to croon "My Way" with your host in a *karaoke* bar. *by Frederick Hiroshi Katayama*

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Doing business in Asia depends on contacts and personal chemistry that builds trust. Sometimes the best allies are people who operate beyond the scenes. Get to know—or at least know about—these influential insiders. *by Louis Kraar*

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To a company that plays it superstraight, East Asia can be disheartening: The rules are a bit different. But old hands know how to do business there without being defiled. U.S. laws may not be as restrictive as you think. *by Ford S. Worthy*

RANKINGS

THE PAC RIM 150 125
FORTUNE's list of the largest industrial corporations on the Asian side of the Pacific Rim highlights the reach and power of the Japanese—along with the growing strength of South Korea.

THE TOP BANKS 135
This list of the 25 largest banking corporations shows a tidal wave of Japanese money washing across the Pacific. But the fattest profits belong to the socialists who run the Bank of China.

"The Japanese are already saved. They are a sacred race. It is understood, in the traditions of Shinto, that they descend from God."

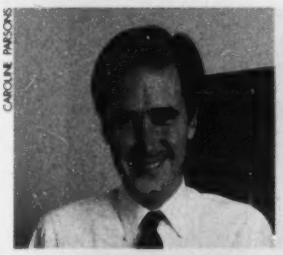
14

"The *chaebol* are driven by an almost religious fervor for expansion. They all want to build empires."

36

"The other American banks are essentially either going home or folding up a lot of their tents."

68



CAROLINE PARSONS

"I have seen expatriates in Asia looking harried, puzzled, resentful, and broke. I don't know any who have been bored."

91

"In Japanese society, it takes an awful lot of effort for a woman to achieve a man's post in a company."

101

"If I played golf and drank, then everyone at Daewoo would follow my example."

101

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MARIANNE BARCELLONA ©

Editor Holt

No part of the world is more intriguing right now than the necklace of nations stretching from Japan's northern tip through China and Southeast Asia to Australia and New Zealand. And no wonder. The Asian side of the Pacific Rim contains the world's most torrid economies.

LINCOLN POTTER—GAMMA/LIAISON

Louis Kraar

If you don't know the Rim, you would be wise to become well acquainted. Even if you do regularly fly to Tokyo or Seoul, there are corners of the region that you will need to know about soon. This special issue will enjoyably help you do that.

To produce it, international editor Donald Holt directed a team of 45 editors, writers, reporters, designers, and photographers. Says Holt: "Along with all the stunning statistics, we wanted to give readers an insider's look."

Louis Kraar, who recently returned from six years as our man in Southeast Asia, spent six weeks back on his old beat. Among his stories: "Meet 25 People You Ought to Know," written with the help of reporter Sally Solo in Tokyo, is a revealing Who's Who of the Pac Rim.

JIM R. LLOYD

Ford Worthy

Roy Rowan, who first went to China for *Life* in the 1940s, produced the text for "A Strategic Guide to the Rim," eight pages of charts and words that mix hard data—compiled by reporter Sara Hammes—with highly personal impressions of 12 countries.

Ford Worthy, who replaced Kraar in Hong Kong last year, wrote three stories, with help from reporter Shelley Neumeier. The toughest, he says, was sorting out confusing patterns in China since the June massacre. Carla Rapoport, our Tokyo bureau chief, tells how Japan *really* works, in a story that will surprise you.

Krist

One of the more fascinating aspects of the region is its booming stock markets, profiled by John Curran, our chief investment writer. Last year he wrote a landmark analysis of the Tokyo stock exchange, taking the contrarian opinion that what looked to many on Wall Street as a highly overvalued market was actually on solid ground. He proved to be right on the money, and his story won the Overseas Press Club Award for the year's best financial reporting from abroad.

Smyth

Rosenthal

Barbara Smyth designed the issue, aided by Mark Rosenthal. Elizabeth Krist directed a platoon of photographers. Before your first—or next—trip to Asia, put your feet up and let us show you around.

Marshall Loeb
MANAGING EDITOR

CAROLINE PARSONS

Members of the Pac Rim special issue team (from left): writers Carla Rapoport, John Curran, and Roy Rowan; reporters Frederick Hiroshi Katayama, Sara Hammes, and Joan Vlebranz

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MAPS AND GRAPHICS
DESIGNED AND ILLUSTRATED
BY JOHN GRIMWADE, DAVID TAUB,
AND GREGORY WAKABAYASHI

TEXT BY ROY ROWAN
REPORTED BY SARA HAMMES

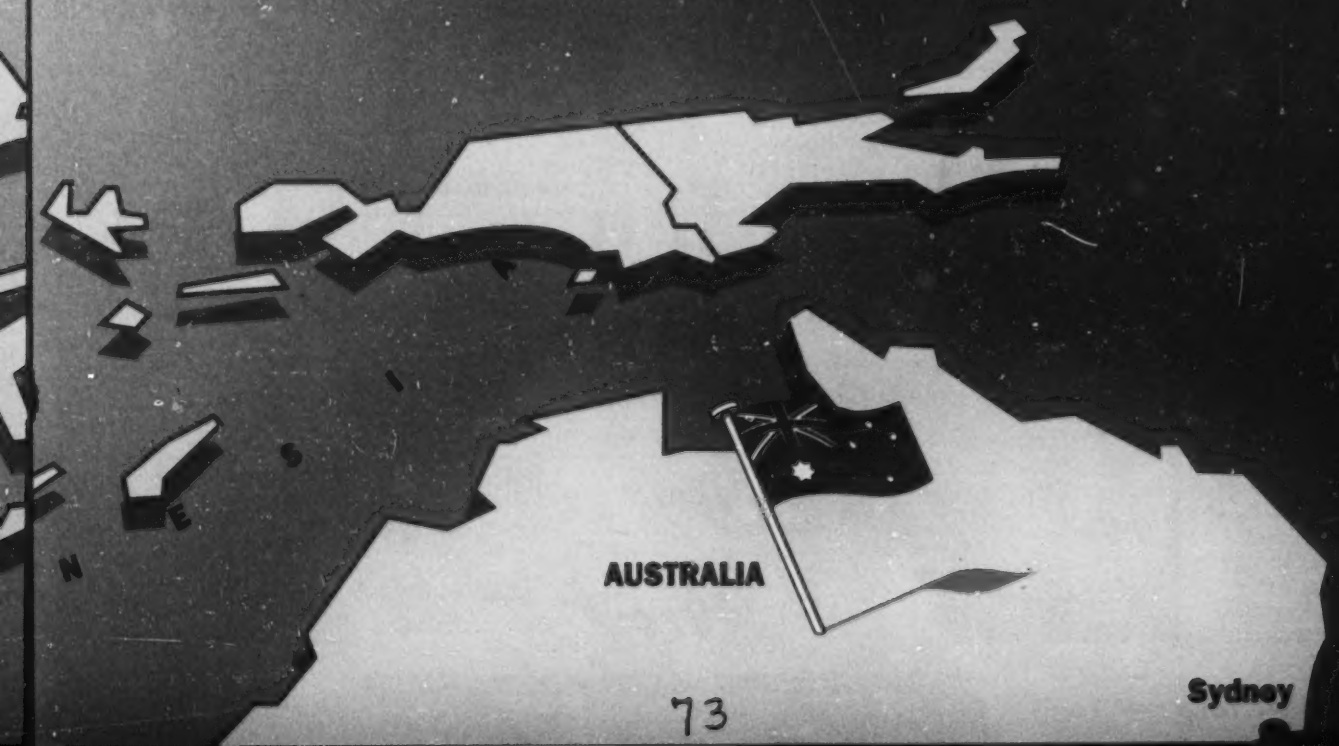
Stretching from Hokkaido in northern Japan to Tasmania in southern Australia, a distance of 6,000 miles, the Asian side of the Pacific Rim is populated by some two billion people whose looks, lifestyles, politics, and economic progress differ as widely as the topographies of their countries.

A STRATEGIC GUIDE TO THE RIM

They vary strikingly in size, shape, and political stripe. Yet the Pacific Rim countries developing fastest share an aptitude for melding new Western technologies with old Oriental virtues—discipline, patience, and diligence. What's more, their governments are actively seeking American partners to team up with indigenous entrepreneurs. Chauvinism and corruption can still kill a deal, but the old antagonisms bred of colonialism and war are fading.

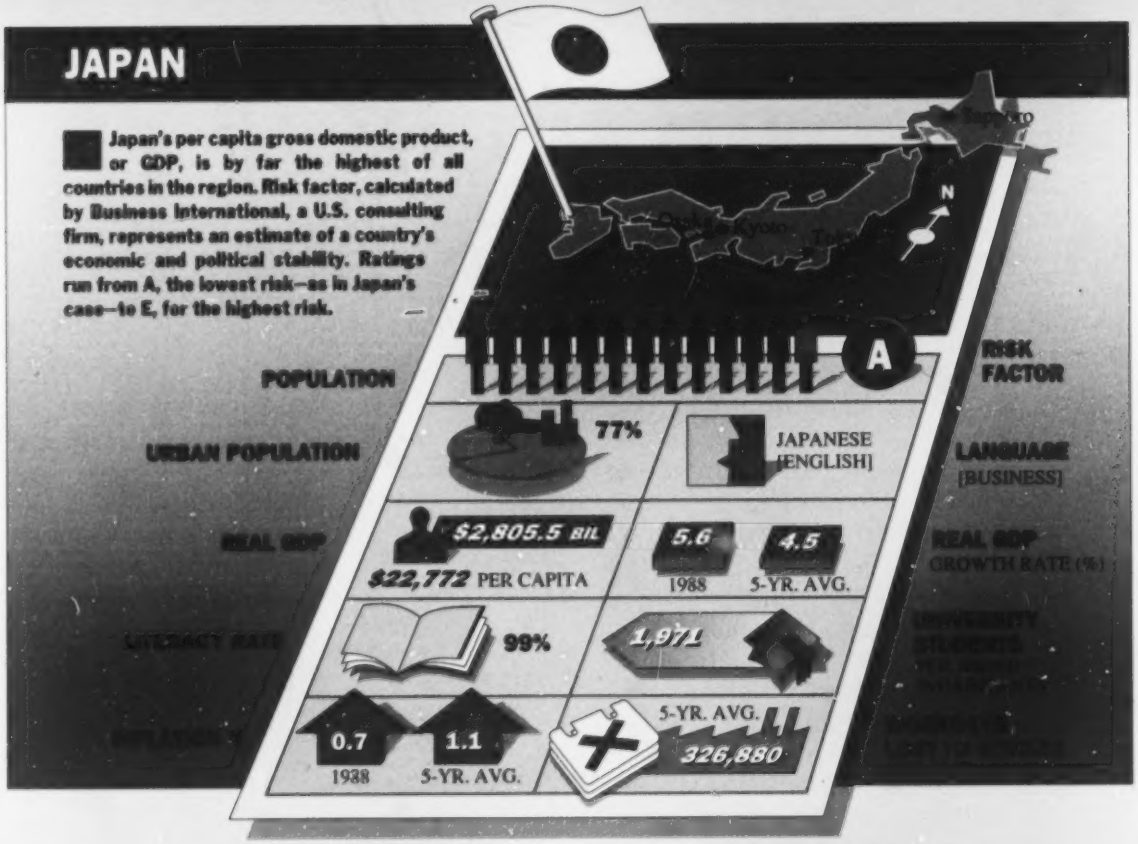
On the surface, the culture gap between East and West seems to be disappearing. Soaring skyscrapers and roaring subways, the blare of rock music and the blur of blue jeans along any street, heighten an impression that "these folks are just like us." They're not. Even in high-living Hong Kong, where chauffeured Rolls-Royces crowd each other on the narrow roads, it's not unusual to see a bicyclist pedaling past with a side of pork slung over the back wheel.

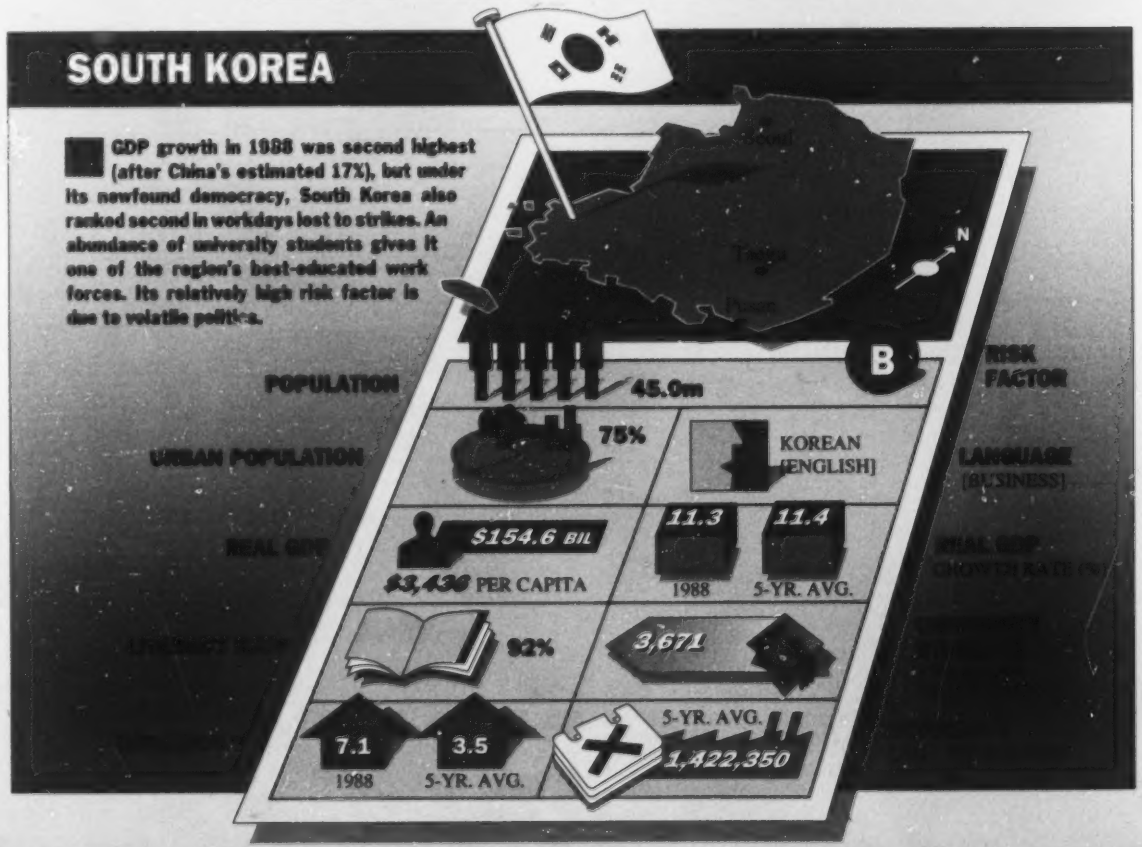
Travel through the region is usually punctual, and accommodations comfortable. But holding an airline ticket doesn't guarantee a seat unless you've reconfirmed. And don't venture anywhere without a room reservation. In Taipei or Bangkok a cellular phone may come in handy. However, in Tokyo it's almost impossible to be out of reach of a pay phone. But you'd better know the color coding: Red, pink, and yellow phones take coins only, while green ones accept prepaid cards sold for 500 or 1,000 yen apiece. On the following pages are more colors in the rainbow of opportunity that arcs across the Asian side of the Pacific.



Japan boasts that it has already replaced the U.S. as the world's richest country, at least in the value of its assets. An acre of prime Tokyo land, for example, sells for $1 billion. What's incontrovertible is that space remains Japan's scarcest commodity; picture half the population of the U.S. crammed into California. But the ubiquitous crowds surging through neon-splashed, gimcrack downtowns or packing *rah-shah-wah* (rush hour) trains or staging a Sunday mass assault on snow-fringed Mount Fuji no longer translate into abundant or cheap labor. Unemployment is a mere 2.3%, and there are 132 jobs for every 100 applicants. The only human resource shortage seems to be in straight-arrow politicians: Bribery and a sex scandal brought down two Prime Ministers this year. Laments an official, "We have a first-rate economy, a second-rate standard of living, and third-rate politicians."

South Korea, economically bled by the occupying Japanese from 1910 to 1945, set adrift by a Soviet-U.S. agreement in 1945, and invaded by the North Koreans in 1950, racked up a $14 billion trade surplus last year—especially remarkable considering that the nation has almost no natural resources. But then South Koreans approach economic growth with the same determination and precision they apply to tae kwon do, their ancient martial art, in which they can split a beam in the flash of a foot. As a result, South Korea produces for



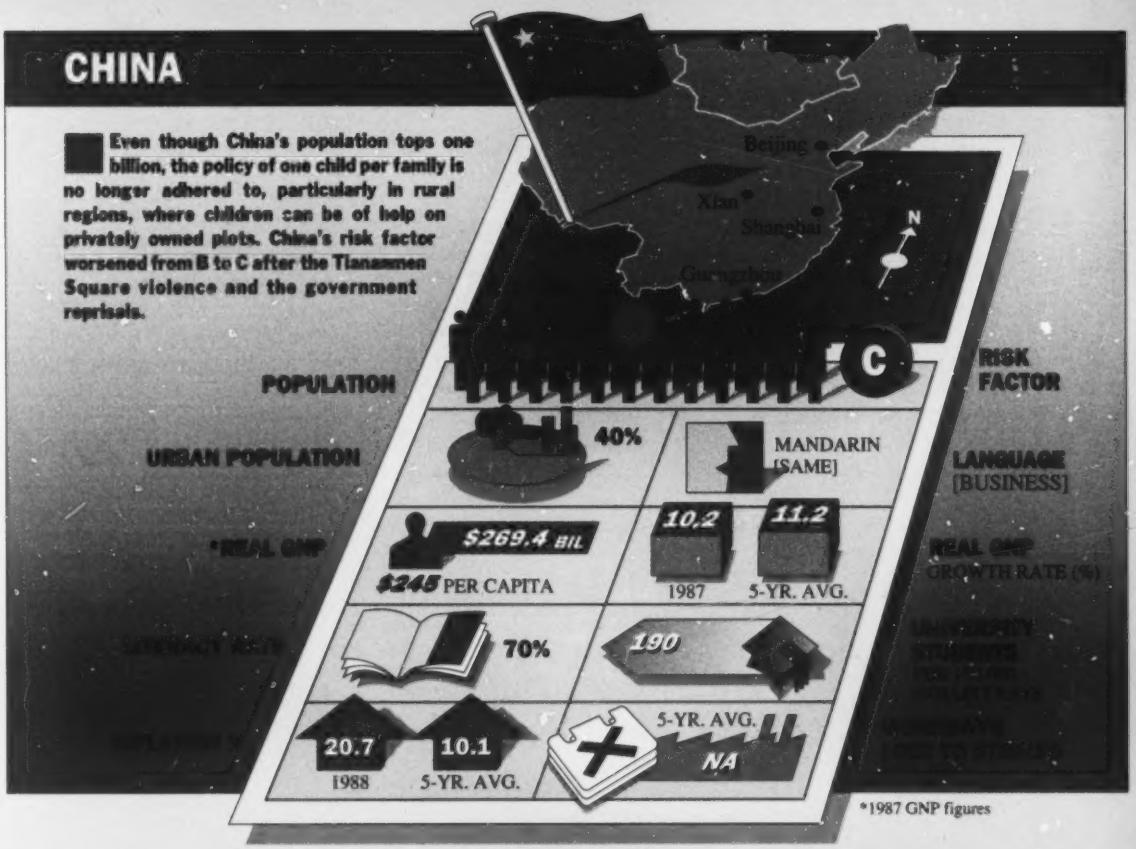


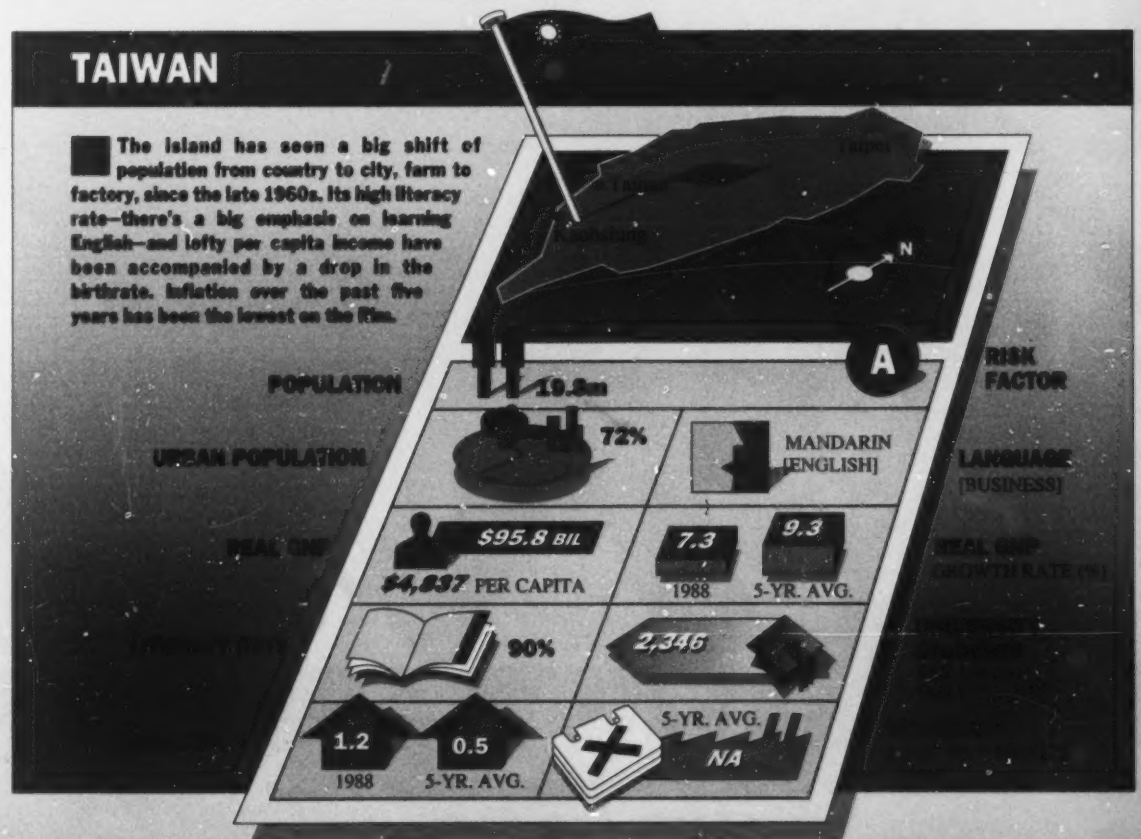
export the least expensive ton of steel, personal computer, and video recorder in the world.

Prospects for a Pacific Century may ultimately depend on the People's Republic of China because of its vast natural and human resources. But last spring's student protests, culminating in the Tiananmen Square massacre, drove away foreign investment. The political crackdown is likely to exacerbate the country's three worst economic problems—a rising trade deficit, dwindling foreign exchange, and industrial output that is declining sharply.

The political gulf between mainland China and small, mountainous, tobacco-leaf-shaped Taiwan remains large. But in practical ways, the two old enemies are growing closer. Trade between the two reached $2.5 billion in 1988. Such trade still moves mainly through Hong Kong, but the government of Taiwan no longer tries to prevent it. Taiwan's roller-coaster stock exchange boasts one of the world's biggest trading volumes (101 billion shares in 1988), on a par with New York and Tokyo. By 11 A.M. it's SRO at Taipei's Wall Street Restaurant, where diners huddle around glass-topped tables, peering down at the latest stock quotations flashing by on green-screened TV monitors underneath lunch.

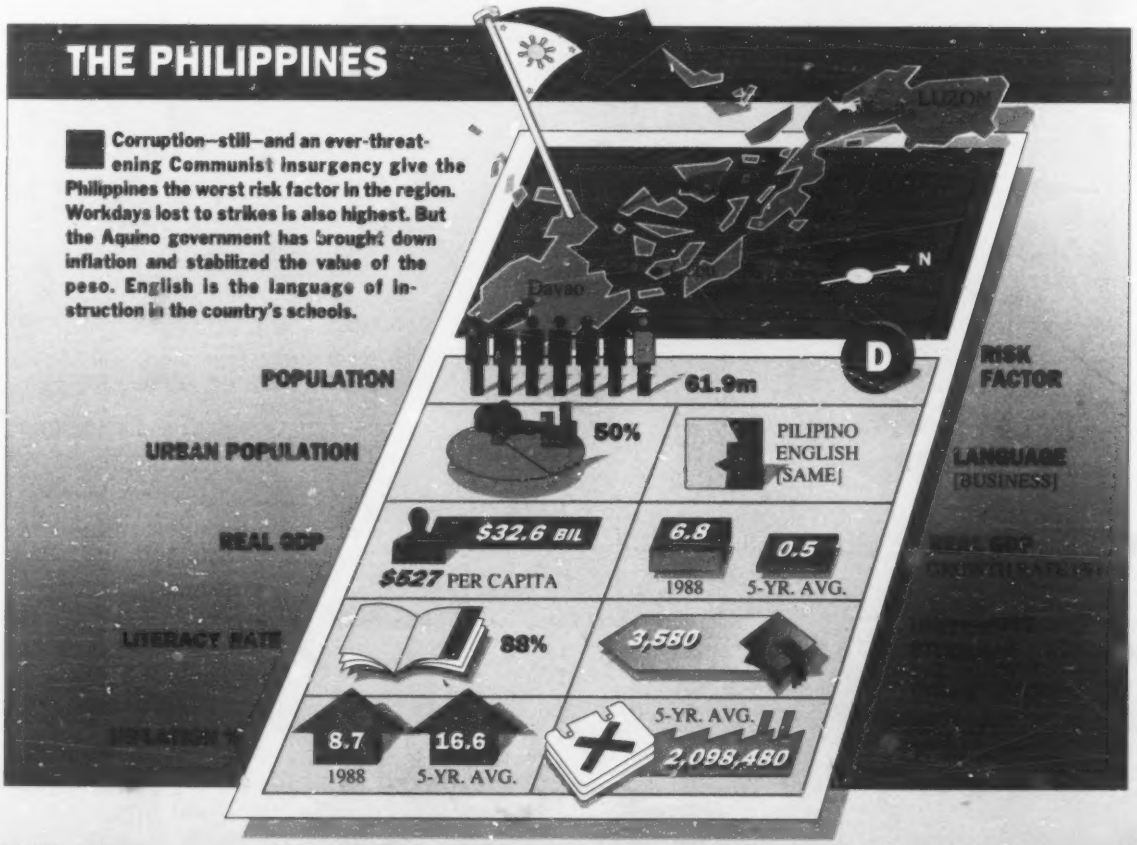
In Hong Kong's entrepreneurial paradise (low taxes, no tariffs, and





few government controls), it is said that "Mao was overtaken by Mammon." Despite the uncertainty over exactly how China will treat the 410-square-mile territory when it takes over in 1997, shimmering steel-and-glass towers keep sprouting among the lush green peaks. The Chinese have promised to make Hong Kong a Special Administrative Region so that at least some of the wheeling and dealing—which generates much of China's hard currency—can continue. But the harsh way in which China's aging leaders responded to student demands for democracy have created big doubts in Hong Kong. The flight of capital—and people—has begun.

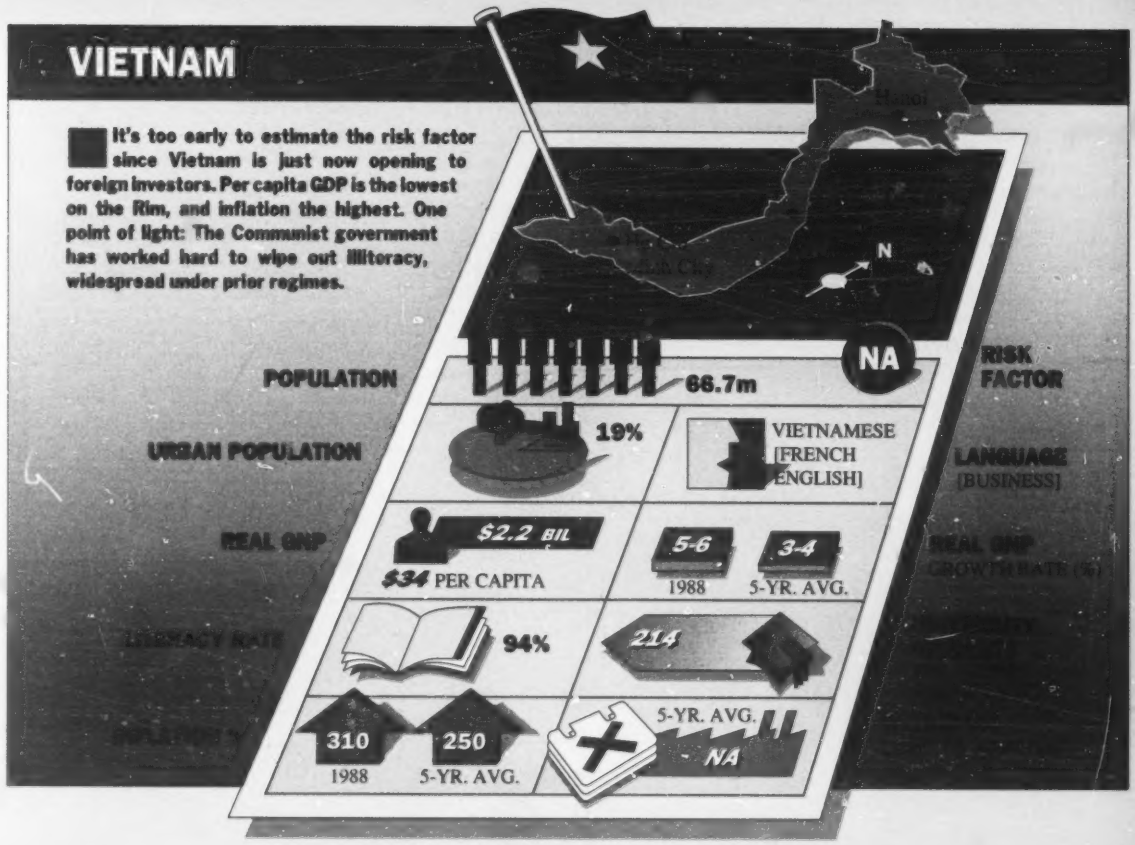
From the rice terraces etched into the steep mountainsides of northern Luzon to the pineapple plantations carved out of the dense jungles of southern Mindanao, Americans prospecting for new places to invest in Asia will find no more welcoming place than the Philippines. Most of the people speak English. More important, the economy, long ravaged by corruption under former dictator Ferdinand Marcos, is finally picking up, though his successor, Corazon Aquino, has not been able to cure the disease completely. Foreign investment tripled last year to nearly $1 billion, while exports rose 27% to $7 billion. This year 19 countries and seven international organizations led by the World Bank are pumping $3.5 billion in grants and loans

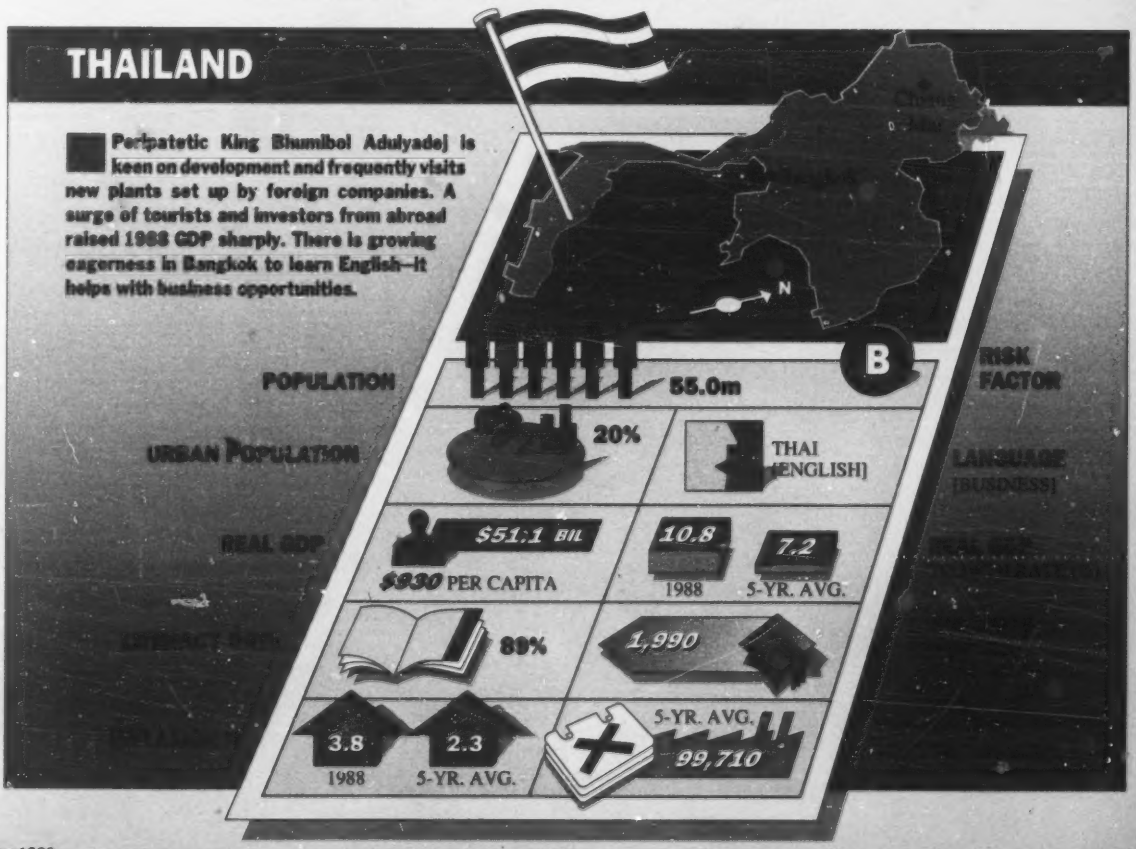


into the Philippines Assistance Plan. A settlement was also reached with international banks to restructure the country's $28 billion debt.

To rouse a comatose economy, the Communist leaders of Vietnam are trying a little market capitalism. Called *doi moi*, this local version of Soviet perestroika is supposed to encourage Vietnamese entrepreneurs to start small businesses. Farmers can keep half their crops. So far *doi moi* has made little headway. Unemployment remains high, though inflation is moderating. The Vietnamese are also trying to lure Western and Japanese investment by setting a realistic exchange rate and adopting flexible regulations on foreign investment. Saigon veterans will discover another bright spot: The famous Continental Hotel, once the haunt of Graham Greene, whose 1955 novel, *The Quiet American*, foresaw America's misfortune in Vietnam, has just reopened, with English-speaking university grads as waiters.

Thailand's Prime Minister Chatichai Choonhavan loves motorcycling and disco dancing—and foreign investors. Such economic aggressiveness belies Pentagon experts who predicted that this land of golden temple spires would be the first domino to fall after U.S. troops pulled out of Vietnam. Instead, new investment has been growing faster than anywhere else in Southeast Asia. But newcomers may be put off by Bang-



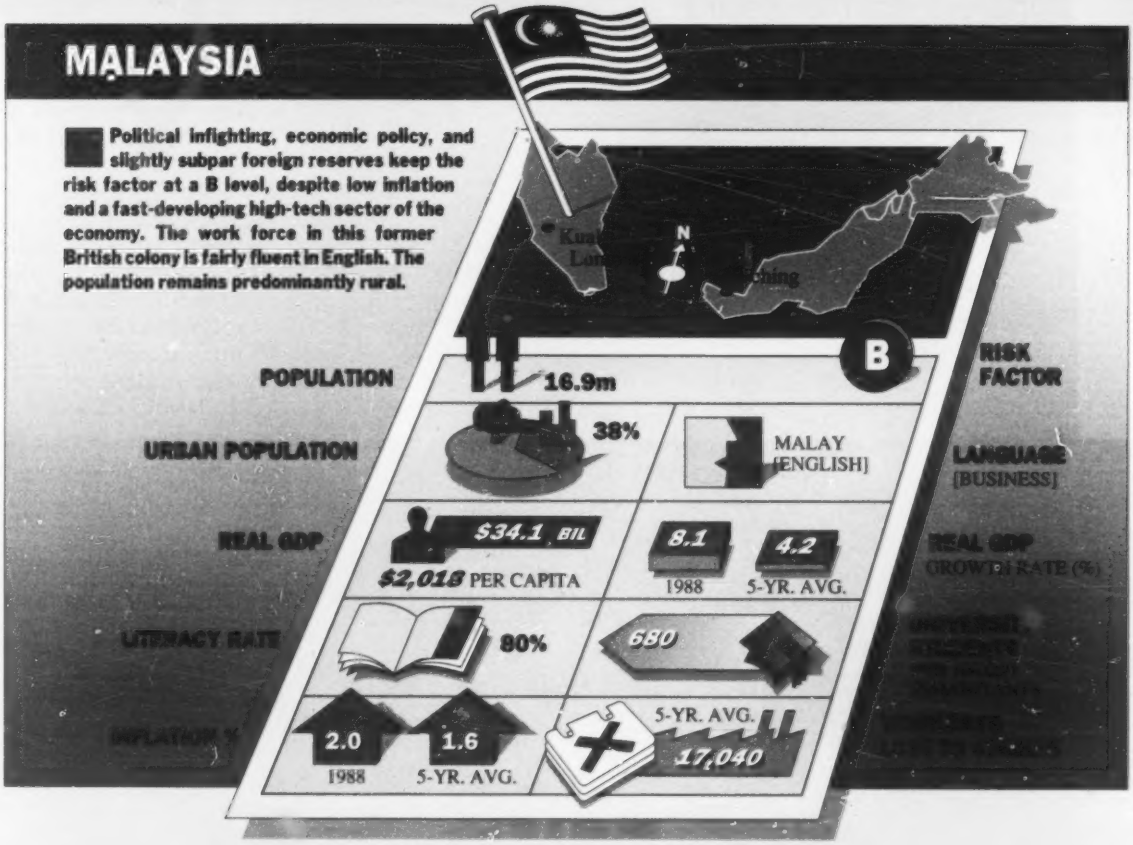


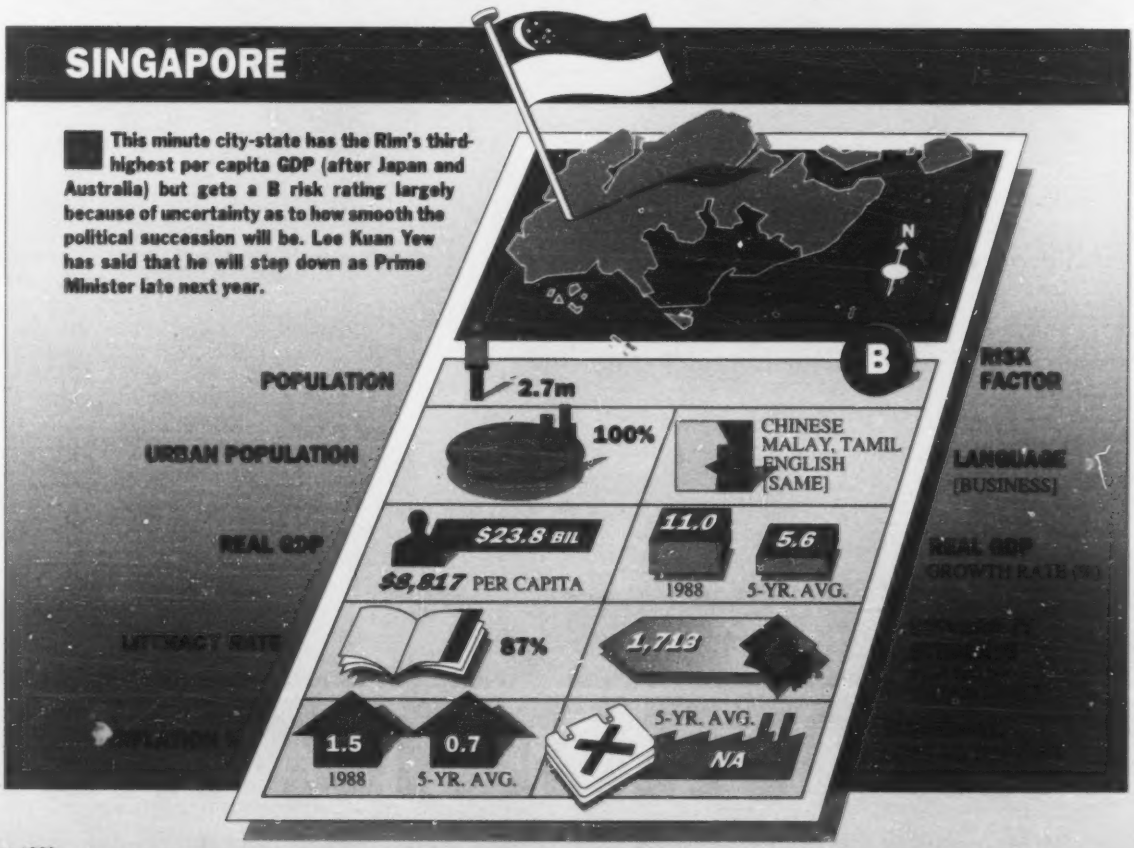
kok's tangled traffic, temperamental phones, and tourist hordes flocking everywhere from the captivating Emerald Buddha to the massage parlors of Patpong.

By contrast, Malaysia's modern roads, instant telecommunications, and well-educated workers are a pleasant surprise. All the more so because a volatile ethnic mix (47% Malay, 33% Chinese, and 9% Indian) once seemed to threaten development. Though Malaysia is the third-largest producer of semiconductors after the U.S. and Japan, commodities remain important. Petroleum, palm oil, rubber, tin, timber, and cocoa account for 45% of exports.

Singapore is so small that incoming 747s must be wheels down before they sweep across the frontier. Yet the 240-square-mile city-state is one of the world's biggest oil refiners and is wall to wall with multinational manufacturers. The political stability provided by Prime Minister Lee Kuan Yew's strict 30-year reign has turned Singapore into a high-tech mecca with one of the highest living standards in Asia. The average annual wage has shot up to approximately $4,800, some five times that of an unskilled Indonesian next door.

Indonesia is rich in potential. It is Southeast Asia's largest country, with more than 13,500 islands flung over 3,000 miles of ocean. The world's most populous Islamic nation, it has proven oil reserves of nine billion





barrels and deposits of almost every mineral used by industry. The country's potential, however, is still far from being realized. Depressed oil revenues, off 50% since 1985, badly damaged the economy. Indonesia is Asia's biggest borrower, with debts of $53 billion. Interest alone takes a third of the national budget. But the money gets paid—Indonesia has an excellent record for honoring its obligations.

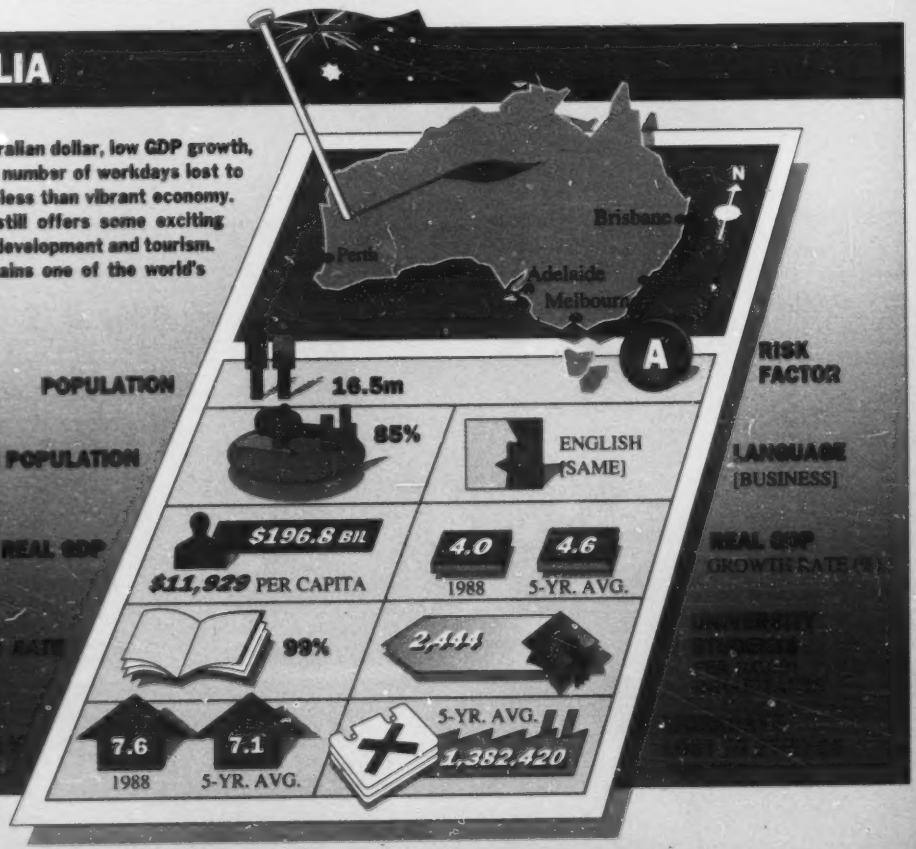
Australians, who sometimes affectionately refer to their land as the Lucky Country, are concerned that it's going Asian. A middle-income housing development in Sydney called Killarney Heights has been dubbed Hiroshima Heights by real estate developers who complain that the Japanese and Hong Kong Chinese are the only home buyers with any money. The *Taipan*, a four-deck floating Chinese restaurant juxtaposed against the spectacular "flying roof" of Sydney's harborside opera house, is a local landmark. Growing almost as familiar are the legions of Vietnamese immigrants—some 104,000 in all—now holding down jobs in a country where unemployment is almost 7%. But then native Australian labor, it has been said, can be "so laid back as to be positively horizontal." ■

INDONESIA

Contributing to its high risk factor is speculation that this will be President Suharto's last term, completing 25 years in office. The large national debt is also a worry. Low literacy is attributable to a large rural population and the multiplicity of languages spoken in the country.

AUSTRALIA

A weak Australian dollar, low GDP growth, and the high number of workdays lost to strikes indicate a less than vibrant economy. Yet the country still offers some exciting opportunities for development and tourism. The Outback remains one of the world's last frontiers.



SOURCES: INTERNATIONAL LABOR ORGANIZATION; UNITED NATIONS EDUCATIONAL, SCIENTIFIC, & CULTURAL ORGANIZATION; BUSINESS INTERNATIONAL CORP.

THE PAC RIM 150

FORTUNE's list of the largest industrial corporations on the Asian side of the Pacific Rim highlights the reach and power of the Japanese—along with the growing strength of the South Koreans.

The power of Japan in the Pacific Rim comes blasting through in FORTUNE's list of the 150 largest industrial companies ranked by sales. All but 23 are Japanese. But that's no surprise. What is striking is the strength of the big conglomerates of Korea (see South Korea). Two of the top ten are Korean—Samsung (No. 5) and Daewoo (No. 9).

In all, South Korea has ten companies on the list. That's matched by Australia, though with a difference. The Korean companies are in heavy manufacturing or electronics. In mineral-rich—and thirsty—Australia, most of the giants are in natural resources or brewing. Malaysia, New Zealand, and Taiwan each have one company among the 150. Some major companies are not on the list because they are private or family-owned.

It was a good year for Japanese carmakers. Toyota Motor not only came in first in sales, with $50.8 billion, but also was No. 1 in profits, with $2.3 billion. Nissan Motor, which ranks fourth in sales, had a big turnaround last year. Profits soared 273.7% to $463 million.

The earnings comeback champ was Omron Tateisi Electronics of Japan (No. 127). The company, which makes equipment for factory and office automation, reported a 309.8% increase in profits. Making gains of at least 200% were Hyundai Heavy Industries (No. 86) in Korea and a handful of Japanese companies—General Sekiyu (No. 101), a petroleum refiner; Nisshin Steel (No. 113); Onoda Cement (No. 116); and Canon (No. 24), the maker of computers, faxes, copiers, and photographic equipment.

Only two companies lost money: Pacific Dunlop (No. 118), an Australian manufacturer of tires and the world's largest maker of condoms, and Kanebo, the Japanese cosmetics and textile company. Pacific Dunlop attributed its $29.3 million loss to expenses in connection with acquisitions. Kanebo said its $19 million loss was due in part to closing a subsidiary. **– Joan C. Vlebranz**

Rank	COMPANY Ranked by sales	COUNTRY	SALES $ Millions	PROFITS $ Millions	PROFITS Rank	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank	EMPLOYEES Number	EMPLOYEES Rank
1	TOYOTA MOTOR[1]	JAPAN	50,789.9	2,314.6	1	40,817.6	2	24,603.2	1	86,082	10
2	HITACHI[2]	JAPAN	41,330.7	989.0	4	49,862.4	1	16,265.5	3	283,996	1
3	MATSUSHITA ELECTRIC INDUSTRIAL[2]	JAPAN	33,922.5	1,177.2	3	30,011.4	3	19,961.4	2	134,186	3
4	NISSAN MOTOR[2]	JAPAN	29,097.1	463.0	13	33,631.2	4	11,645.2	4	108,716	5
5	SAMSUNG	SOUTH KOREA	27,386.1	464.3	12	22,192.7	10	2,749.2	34	175,710	2
6	TOSHIBA[2]	JAPAN	25,440.8[3]	438.9[3]	14	27,873.8[3]	6	5,785.2[3]	9	122,000[3]	4
7	HONDA MOTOR[2]	JAPAN	22,236.5[4]	819.5[4]	6	14,282.1	19	6,282.7	7	58,320	14
8	NEC[2]	JAPAN	19,626.1	183.4	36	23,408.0	8	4,780.2	16	102,452	6
9	DAEWOO	SOUTH KOREA	17,251.2	23.3	122	24,307.2	7	2,917.3	32	93,930	8
10	NIPPON STEEL[2]	JAPAN	17,108.9[5]	291.7[5]	22	28,614.9[5]	5	5,458.7[5]	12	67,706[5]	12
11	MITSUBISHI ELECTRIC[2]	JAPAN	16,857.4	180.6	45	17,961.3	13	4,444.8	18	75,795	11
12	MAZDA MOTOR[2]	JAPAN	15,150.9	76.4	77	9,576.8	30	2,647.9	38	28,027	32
13	FUJITSU[2]	JAPAN	14,797.3	304.5	20	18,667.2	12	6,884.2	6	94,825	7
14	MITSUBISHI MOTORS[2]	JAPAN	14,183.3	96.2	69	11,593.2	24	1,250.9	67	25,600	35
15	MITSUBISHI HEAVY INDUSTRIES[2]	JAPAN	13,398.0	221.8	30	22,472.6	9	4,907.3	15	56,100	15
16	NIPPON OIL[2]	JAPAN	12,773.0[6]	187.0	41	12,[illegible]6.0	22	3,310.4	26	10,178	97
17	SONY[2]	JAPAN	10,123.9[3]	265.6[3]	28	15,043.2[3]	17	5,240.5[3]	14	60,500[3]	13
18	SANYO ELECTRIC[2]	JAPAN	9,375.0[6]	47.7	103	13,691.6	20	5,414.8	13	38,179	21
19	BRIDGESTONE	JAPAN	9,296.0	210.2	38	11,194.3	25	3,022.2	29	88,148	9
20	IBM JAPAN	JAPAN	9,269.6[3]	605.1[3]	8	5,405.2[3]	61	2,490.5[3]	39	21,061[3]	47
21	ISUZU MOTORS[2]	JAPAN	9,267.9[6]	51.0	101	7,001.2	48	1,124.8	73	24,443	41
22	NIPPONDENSO	JAPAN	8,962.5[3]	301.1[3]	21	8,213.3[3]	37	4,020.6[3]	20	47,239[3]	18
23	IDEMITSU KOSAN[2]	JAPAN	8,814.9[3]	9.2[3]	145	10,123.1[3]	28	337.9[3]	137	5,407[3]	133
24	CANON	JAPAN	8,631.0[3]	289.5[3]	23	10,394.6[3]	27	3,330.4[3]	25	40,740[3]	20
25	SHARP[2]	JAPAN	8,608.0[3]	148.3[3]	46	13,042.9[3]	21	3,851.1[3]	21	28,351[3]	29

The definitions and concepts underlying the figures in this directory are explained on page 132. Footnotes appear on page 130.

Rank	COMPANY	COUNTRY	SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES	
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank
26	NKK[2,3]	JAPAN	8,276.0[3]	122.4[3]	58	21,270.5[3]	11	1,963.5[3]	51	31,223[3]	26
27	COSMO OIL[2]	JAPAN	7,960.3	56.3	96	8,765.9	34	495.5	125	4,191	141
28	SHOWA SHELL SEKIYU	JAPAN	7,744.8[3]	85.8[3]	72	6,009.0[3]	53	522.0[3]	123	2,428[3]	146
29	SUNKYONG	SOUTH KOREA	7,722.6	138.8	51	4,970.0	69	1,291.9	65	20,572	49
30	ASAHI GLASS	JAPAN	7,702.1[4]	358.1	15	8,159.8	38	3,604.1	22	16,692	65
31	SUMITOMO METAL INDUSTRIES[2]	JAPAN	7,675.5	20.7	134	16,606.5	14	2,706.5	35	29,509	28
32	KOBE STEEL[2]	JAPAN	7,631.9	34.9	119	15,899.5	15	1,604.7	56	25,583	36
33	ELDERS IXL[1]	AUSTRALIA	7,618.2	555.0	10	7,387.2	44	3,347.4	23	38,000	22
34	TAIYO FISHERY[9]	JAPAN	7,410.8	1.0	148	3,507.6	96	258.0	142	8,066	108
35	KAWASAKI STEEL[2]	JAPAN	7,333.1	62.9	89	14,385.4	18	2,700.6	36	26,909	33
36	JAPAN TOBACCO[2,10]	JAPAN	7,261.7[3]	286.2[3]	27	12,232.4[3]	23	7,866.1[3]	5	28,100[3]	31
37	MITSUBISHI KASEI[2,10,11]	JAPAN	7,157.4	171.6	39	10,025.1	29	1,498.3	59	19,014	53
38	BROKEN HILL PROPRIETARY[12]	AUSTRALIA	7,079.5	710.1	7	15,325.3	16	4,897.6	17	51,000	16
39	SUMITOMO CHEMICAL	JAPAN	7,002.0	304.9	19	7,856.9	41	1,442.3	61	12,340	86
40	ASAHI CHEMICAL INDUSTRY[2]	JAPAN	6,882.4	175.4	37	7,319.3	45	2,178.0	47	22,105	44
41	CHINESE PETROLEUM[10]	TAIWAN	6,706.4	1,942.4	2	8,147.9	39	6,045.7	8	23,328	42
42	DAI NIPPON PRINTING[2]	JAPAN	6,574.7[4]	234.4[4]	29	6,126.9	52	3,128.5	28	13,470	78
43	SNOW BRAND MILK PRODUCTS[2]	JAPAN	6,435.1	38.8	114	2,921.7	110	558.0	120	14,604	73
44	SUZUKI MOTOR[2]	JAPAN	6,379.4	76.7	76	4,863.0	75	1,002.1	84	12,997	81
45	ISHIKAWAJIMA-HARIMA HEAVY IND.[2]	JAPAN	6,174.7	3.8	146	8,938.4	33	1,001.4	85	26,747	34
46	TOPPAN PRINTING[2]	JAPAN	6,148.1[4]	164.2[4]	42	5,310.7	63	2,307.4	45	14,200	74
47	MATSUSHITA ELECTRIC WORKS[2]	JAPAN	6,131.9	185.6	35	5,768.1	59	2,374.2	43	18,153	61
48	SSANGYONG	SOUTH KOREA	6,021.2	196.1	34	9,434.4	31	2,019.0	49[7]	18,831	56
49	FUJI PHOTO FILM[10]	JAPAN	5,987.7	576.2	9	9,209.8	32	5,653.7	11	18,195	60
50	MITSUBISHI METAL[2]	JAPAN	5,611.1[3]	45.8[3]	105	5,845.9[3]	57	605.4[3]	117	11,265[3]	89
51	SUMITOMO ELECTRIC INDUSTRIES[2]	JAPAN	5,556.7	134.4	53	5,971.6	55	1,953.8	52	25,246	38
52	KIRIN BREWERY	JAPAN	5,550.1[3,4]	275.1[3,4]	24	7,876.8[3]	40	2,968.2[3]	30	12,238[3]	87
53	NIPPON MINING[2]	JAPAN	5,375.5[3]	53.1[3]	100	5,552.8[3]	60	780.2[3]	99	7,326[3]	112
54	TORAY INDUSTRIES[2]	JAPAN	5,362.4	208.7	31	7,107.6	47	2,396.3	42	25,409	37
55	FLETCHER CHALLENGE[1]	NEW ZEALAND	5,135.1	344.2	16	7,569.5	43	2,121.3	48	41,000	19
56	KOMATSU[2]	JAPAN	5,048.2[4]	89.8[4]	70	8,329.7	36	3,229.7	27	22,901	43
57	SHOWA DENKO	JAPAN	4,986.7	143.1	48	4,716.2	73	595.4	118	6,143	126
58	FUJI HEAVY INDUSTRIES[2]	JAPAN	4,923.9	53.4	99	5,051.8	67	1,523.6	57	15,698	69
59	KUBOTA[2]	JAPAN	4,889.1[3,4]	133.0[3,4]	54	5,911.5[3]	56	2,462.9[3]	41	17,500[3]	62
60	RICOH[2]	JAPAN	4,869.1[3]	123.0[3]	57	5,161.2[3]	65	2,348.8[3]	44	30,500[3]	27
61	KAWASAKI HEAVY INDUSTRIES[2]	JAPAN	4,862.2	66.6	87	7,605.3	42	663.4	110	19,236	52
62	DAIHATSU MOTOR[2]	JAPAN	4,652.0[4]	43.5[4]	110	3,423.5	98	810.5	97	18,674	58
63	HYUNDAI MOTOR COMPANY	SOUTH KOREA	4,642.5	57.7	95	3,560.2	94	659.7	113	34,000	25
64	TAKEDA CHEMICAL[2]	JAPAN	4,574.6[3]	273.4[3]	26	8,763.8[3]	49	3,337.7[3]	24	13,854[3]	76
65	FURUKAWA ELECTRIC[2]	JAPAN	4,563.8	103.9	65	5,095.6	66	1,024.2	81	15,259	70
66	TOYO SEIKAN[2]	JAPAN	4,548.4	161.4	44	3,805.7	88	1,631.0	55	6,107	127
67	TOA NENRYO KOGYO	JAPAN	4,543.8	273.5	25	5,048.7	68	2,778.8	33	2,286	147
68	DAINIPPON INK & CHEMICALS[2]	JAPAN	4,487.8	47.9	102	5,440.6	62	966.6	89	18,694	57
69	NEWS CORPORATION[1]	AUSTRALIA	4,383.9	343.6	17	11,004.9	26	4,022.8	19	28,305	30
70	KANEBO[2]	JAPAN	4,202.9[3,4]	(19.0)[3,4]	149	4,810.8[3]	71	91.8[3]	150	24,987[3]	39
71	HYOSUNG	SOUTH KOREA	4,182.8[3]	38.2[3]	113	3,096.5[3]	108	898.0[3]	94	24,500[3]	40
72	CRA	AUSTRALIA	4,165.0	471.5	11	6,499.9	51	2,964.3	31	21,834	46
73	FUJI ELECTRIC[2]	JAPAN	4,028.6	47.6	104	5,181.7	64	980.5	90	17,496	63
74	OJI PAPER[9]	JAPAN	4,006.6	126.1	56	4,742.3	72	1,475.0	60	5,484	135
75	TEIJIN[2]	JAPAN	3,891.9	144.8	47	5,819.7	58	1,721.9	53	11,220	90

The definitions and concepts underlying the figures in this directory are explained on page 132. Footnotes appear on page 130.

Rank	COMPANY	COUNTRY	SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES	
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank
76	GOLD STAR[14]	SOUTH KOREA	3,857.8	24.8	131	3,242.0	104	589.8	119	36,442	24
77	UBE INDUSTRIES[2]	JAPAN	3,848.1	139.9	49	6,500.1	50	379.2	136	12,578	82
78	NIPPON SUISAN KAISHA[2]	JAPAN	3,838.9	29.4	126	2,333.9	128	610.3	116	6,242	124
79	SEKISUI CHEMICAL[2]	JAPAN	3,836.1	101.7	66	3,700.8	90	1,124.1	74	8,135	106
80	NIPPON MEAT PACKERS[2]	JAPAN	3,799.8	72.3	82	2,372.9	126	934.4	92	13,232	79
81	AISIN SEIKI[2]	JAPAN	3,788.8	72.1	83	2,762.4	115	1,214.5	70	12,427	85
82	MITSUBISHI OIL[2]	JAPAN	3,755.1	56.1	97	4,225.1	79	259.5	141	3,385	144
83	KAO[2]	JAPAN	3,719.1	96.2	68	3,630.9	93	1,697.8	54	11,000	91
84	PETRONAS[2,16]	MALAYSIA	3,633.0	886.8	5	8,516.7	35	5,753.3	10	7,292	113
85	YAMAHA MOTOR[2]	JAPAN	3,609.1	58.0	93	3,512.5	95	465.0	129	9,836	99
86	HYUNDAI HEAVY INDUSTRIES	SOUTH KOREA	3,608.2	59.4	91	4,031.1	85	1,028.8	80	49,300	17
87	AJINOMOTO[2]	JAPAN	3,495.1	119.9	60	4,934.4	70	2,475.5	40	9,543	100
88	SUMITOMO RUBBER	JAPAN	3,455.5	39.8	112	3,288.7	100	302.4	139	20,000	50
89	TOYOBO[2]	JAPAN	3,363.6	45.6	106	3,694.1	91	662.8	112	15,077	72
90	JUJO PAPER[2]	JAPAN	3,349.6[3]	87.3[3]	71	4,045.9[3]	84	745.9[3]	101	6,883[3]	117
91	OKI ELECTRIC INDUSTRY[2]	JAPAN	3,263.1[3]	25.1[3]	130	4,132.4[3]	81	957.3[3]	91	18,659[3]	59
92	YAMAHA[2,15]	JAPAN	3,261.1	60.0	90	3,195.5	106	1,131.4	72	17,035	64
93	NIPPON LIGHT METAL[2]	JAPAN	3,255.6	29.4	125	3,374.5	99	141.4	146	10,500	95
94	HINO MOTORS[2]	JAPAN	3,241.8[3]	28.5[3]	127	1,978.1[3]	138	662.9[3]	111	8,095[3]	107
95	TDK[7]	JAPAN	3,221.1	173.3	38	4,077.5	83	2,303.7	46	19,646	51
96	YAMAZAKI BAKING	JAPAN	3,200.9[3]	70.2[3]	84	2,111.1[3]	132	1,036.1[3]	79	15,919[3]	68
97	KONICA[17]	JAPAN	3,175.7	12.7	143	3,843.0	87	1,372.1	62	22,000	45
98	MITSUI TOATSU CHEMICALS[2]	JAPAN	3,156.9	53.6	98	4,706.9	74	400.8	132	11,000	92
99	PIONEER ELECTRONIC[18]	JAPAN	3,089.8	137.2	52	2,369.6	127	1,342.4	63	12,942	80
100	MITSUBISHI PETROCHEMICAL	JAPAN	3,068.0	198.1	33	4,321.7	78	1,000.1	86	3,793	142
101	GENERAL SEKIYU[2]	JAPAN	3,055.2	57.9	94	2,522.8	123	687.7	106	1,750	150
102	SHISEIDO[7]	JAPAN	3,045.6	73.3	80	4,108.3	82	2,003.0	50	18,902	55
103	HONSHU PAPER[2]	JAPAN	2,967.5	26.5	128	4,567.4	77	332.6	138	7,703	109
104	ASAHI BREWERIES	JAPAN	2,932.1	33.3	121	5,977.7	54	1,099.3	75	6,222	125
105	SANYO-KOKUSAKU PULP[2]	JAPAN	2,902.3	69.7	85	3,162.2	107	677.6	108	7,436	110
106	SANKYO[2]	JAPAN	2,892.9	84.9	73	2,849.8	113	1,305.1	64	9,234	101
107	HONAM OIL REFINERY[14]	SOUTH KOREA	2,867.2	36.2	117	1,593.0	141	290.7	140	1,881	149
108	NISSAN SHATAI[2]	JAPAN	2,856.6[3]	14.4[3]	141	1,109.4[3]	148	495.7[3]	128	5,533[3]	132
109	MEIJI MILK PRODUCTS[2]	JAPAN	2,792.0	20.9	133	1,288.7	146	409.1	130	7,408	111
110	TOYO SASH[11]	JAPAN	2,776.7	139.3	50	2,655.8	118	1,008.4	83	4,709	140
111	BOND CORP. HOLDINGS[1]	AUSTRALIA	2,757.4	199.2	32	7,162.7	46	708.1	104	10,408	96
112	DAIDO STEEL[2]	JAPAN	2,754.9[4]	34.8[4]	120	2,884.8	112	544.4	122	10,570	94
113	NISSHIN STEEL[2]	JAPAN	2,698.2	99.7	67	4,148.5	80	976.3	88	8,557	104
114	ALPS ELECTRIC[2]	JAPAN	2,671.5	59.1	92	3,074.3	109	1,037.2	78	14,199	75
115	TOYODA AUTOMATIC LOOM WORKS[2]	JAPAN	2,659.2[3]	75.9[3]	78	1,995.6[3]	137	1,170.7[3]	71	6,697[3]	121
116	ONODA CEMENT[2]	JAPAN	2,641.9	72.5	81	3,722.0	89	664.5	109	6,890	116
117	ITOHAM FOODS[19]	JAPAN	2,617.0	43.0	111	1,462.5	144	768.0	100	6,852	118
118	PACIFIC DUNLOP[1]	AUSTRALIA	2,607.1[3]	(29.3)[3]	150	2,073.9[3]	135	712.6[3]	103	36,605[3]	23
119	YOKOHAMA RUBBER	JAPAN	2,555.0	44.3	108	2,512.3	124	392.7	134	10,751	93
120	PIONEER INTERNATIONAL[1,20]	AUSTRALIA	2,497.0	120.9	59	2,579.1	121	1,022.8	82	9,200	102
121	NISSHIN FLOUR MILLING[2]	JAPAN	2,476.2	44.7	107	1,482.7	142	628.2	115	3,505	143
122	UNITIKA[2]	JAPAN	2,392.1[3]	14.7[3]	140	2,644.0[3]	120	192.0[3]	145	6,674[3]	122
123	MORINAGA MILK INDUSTRY[2]	JAPAN	2,384.2	20.7	135	1,382.8	145	391.1	135	5,110	137
124	KANTO AUTO WORKS[2]	JAPAN	2,320.5[3]	17.8[3]	138	684.8[3]	150	194.9[3]	144	5,761[3]	130
125	LION	JAPAN	2,306.1[3]	18.5[3]	136	1,770.6[3]	140	631.8[3]	114	5,093[3]	138

The definitions and concepts underlying the figures in this directory are explained on page 132. Footnotes appear on page 130.

Rank	COMPANY	COUNTRY	SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES	
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank
126	MITSUI MINING & SMELTING[2]	JAPAN	2,284.0	30.7	124	2,829.4	114	136.1	147	6,714	120
127	OMRON TATEISI ELECTRONICS[3]	JAPAN	2,281.8	78.1	75	2,647.1	119	1,227.0	69	13,851	77
128	TOTO[7]	JAPAN	2,280.0[4]	107.5[3]	62	2,266.1[3]	131	1,045.5[3]	77	8,570[3]	103
129	DAISHOWA PAPER[2]	JAPAN	2,276.1	73.8	79	3,948.2	86	400.3	133	5,275	136
130	NICHIRO GYOGYO KAISHA[7]	JAPAN	2,177.5	10.2	144	1,277.4	147	100.2	149	2,855	145
131	MITSUBISHI MINING & CEMENT[2]	JAPAN	2,174.7	35.5	118	2,893.8	111	556.1	121	6,459	123
132	KYOCERA[3]	JAPAN	2,171.8	163.9	43	3,632.0	92	2,662.0	37	19,000	54
133	SHIN-ETSU CHEMICAL[3]	JAPAN	2,157.6	106.8	63	3,235.1	105	1,087.3	76	10,074	98
134	NIPPON SEIKO[14]	JAPAN	2,155.7	44.1	109	3,254.5	103	1,290.4	66	11,572	88
135	HITACHI ZOSEN[2]	JAPAN	2,123.7	68.1	86	4,655.5	76	482.4	126	5,506	131
136	AMCOR[1]	AUSTRALIA	2,112.3	109.4	61	1,965.8	139	869.3	95	16,000	67
137	MINOLTA CAMERA[3]	JAPAN	2,104.7[3]	18.0[3]	137	2,542.0[3]	122	723.6[3]	102	12,490[3]	83
138	TOYOTA AUTO BODY[7]	JAPAN	2,090.4[3]	16.2[3]	139	761.1[3]	149	235.2[3]	143	6,787[3]	119
139	MEIJI SEIKA[2]	JAPAN	2,070.4	21.7	132	1,476.3	143	812.0	96	5,465	134
140	SUMITOMO HEAVY INDUSTRIES[2]	JAPAN	2,062.8	3.2	147	3,460.6	97	496.4	124	6,000	129
141	MITSUBISHI RAYON[2]	JAPAN	2,051.9	36.4	116	2,728.1	117	697.7	105	7,237	115
142	KURARAY[2]	JAPAN	2,032.9	26.4	129	2,452.9	125	404.4	131	7,237	114
143	BORAL[1]	AUSTRALIA	2,022.8	171.6	40	2,108.9	133	918.4	93	21,000	48
144	SHIONOGI[2]	JAPAN	1,998.2	84.3	74	2,333.7	129	1,231.4	68	8,181	105
145	KYOWA HAKKO KOGYO	JAPAN	1,995.4	104.1	64	2,757.2	116	981.8	87	6,000	128
146	DOOSAN	SOUTH KOREA	1,963.6	32.5	123	2,083.2	134	482.3	127	15,175	71
147	CITIZEN WATCH[2]	JAPAN	1,929.0	37.1	115	2,017.3	136	807.6	98	12,468	84
148	MITSUI PETROCHEMICAL[2]	JAPAN	1,913.2	63.1	88	3,276.5	101	683.7	107	4,938	139
149	CSR[9]	AUSTRALIA	1,904.3	132.4	55	3,274.8	102	1,514.8	58	16,133	66
150	MITSUI MINING[2]	JAPAN	1,899.9	13.8	142	2,305.1	130	123.6	148	2,146	148
TOTALS			952,206.7	26,214.5		1,093,272.8		324,682.6		3,649,064	

Change in Sales

10 biggest increases

	Sales rank	1987–88
BOND CORP. HOLDINGS	111	143.6%
FLETCHER CHALLENGE	55	77.5
SUMITOMO RUBBER	88	70.9
ASAHI BREWERIES	104	66.0
BRIDGESTONE	19	63.9
DAINIPPON INK & CHEMICALS	68	59.8
KIRIN BREWERY	52	56.7
GOLD STAR	76	54.8
PIONEER INTERNATIONAL	120	52.5
PACIFIC DUNLOP	118	49.8

5 biggest decreases

SHOWA SHELL SEKIYU	28	13.8%
HITACHI ZOSEN	135	10.9
CSR	149	6.3
KOMATSU	56	1.4
NISSAN SHATAI	108	.6

Change in Profits†

10 biggest increases

	Sales rank	1987–88
OMRON TATEISI ELECTRONICS	127	309.8%
NISSAN MOTOR	4	273.7
GENERAL SEKIYU	101	264.7
NISSHIN STEEL	113	262.4
ONODA CEMENT	116	254.5
CANON	24	216.2
HYUNDAI HEAVY INDUSTRIES	86	207.5
NIPPON MINING	53	186.7
MITSUBISHI PETROCHEMICAL	100	184.8
SUMITOMO CHEMICAL	39	167.9

5 biggest decreases

PACIFIC DUNLOP	118	143.1%
MINOLTA CAMERA	137	60.0
LION	125	48.1
FUJI HEAVY INDUSTRIES	58	46.2
NEWS CORPORATION	69	37.3

†Listings exclude companies that lost money in 1987.

Footnotes to the industrials

[1] Figures are for fiscal year ended June 30, 1988.
[2] Figures are for fiscal year ended March 31, 1988.
[3] Figures are unconsolidated.
[4] Figure is a FORTUNE estimate.
[5] Figures are for fiscal year ended October 31, 1988.
[6] Figures include some significant subsidiaries owned 50% or less, either fully or on a prorated basis.
[7] Figures are for fiscal year ended November 30, 1988.
[8] Name changed from Nippon Kokan KK June 8, 1988.
[9] Figures are for fiscal year ended January 31, 1988.
[10] Government-owned.
[11] Name changed from Mitsubishi Chemical Industries June 1, 1988.
[12] Figures are for fiscal year ended May 31, 1988.
[13] Figures are for fiscal year ended October 20, 1988.
[14] Formerly consolidated into Lucky-Goldstar.
[15] Name changed from Nippon Gakki October 1, 1987.
[16] Figures are for fiscal year ended April 30, 1988.
[17] Figures are for fiscal year ended April 20, 1988.
[18] Figures are for fiscal year ended September 30, 1988.
[19] Figures are for fiscal year ended February 29, 1988.
[20] Name changed from Pioneer Concrete Services December 19, 1988.

Notes to the Pacific Rim Industrial Companies

Sales

All companies on the list must have derived more than 50% of their sales from manufacturing and/or mining. Sales do not include excise taxes or customs duties levied according to either volume or value sales, and so the figures for some companies—most of which sell gasoline, liquor, or tobacco—may be lower than those published by the companies themselves. Unless otherwise noted, figures exclude intracompany transactions and include consolidated subsidiaries more than 50% owned, either fully or on a prorated basis. Figures have been converted to dollars using an exchange rate that consists of the official average rate during each company's fiscal year (ended December 31, 1988, unless otherwise noted).

Profits

Profits are shown after taxes, minority interests, and extraordinary items. Figures have been converted to dollars using an exchange rate that consists of the official average rate during each company's fiscal year (ended December 31, 1988, unless otherwise noted).

Assets

Totals shown at each company's year-end. Figures have been converted to dollars at the official exchange rate at each company's year-end.

Stockholders' equity

Stockholders' equity is shown at each company's year-end. Minority interest is not included. Figures have been converted to dollars at the official exchange rate at each company's year-end.

Employees

The figure shown is either a year-end or yearly average number as published.

The Industrials by Country

	1-50	51-100	101-150	Total	Largest company	1988 assets in millions	Rank
AUSTRALIA	2	2	6	10	ELDERS IXL	$7,618.2	33
JAPAN	43	42	42	127	TOYOTA MOTOR	$50,789.9	1
MALAYSIA	0	1	0	1	PETRONAS	$3,633.0	84
NEW ZEALAND	0	1	0	1	FLETCHER CHALLENGE	$5,135.1	55
SOUTH KOREA	4	4	2	10	SAMSUNG	$27,386.1	5
TAIWAN	1	0	0	1	CHINESE PETROLEUM	$6,706.4	41

Index to the Companies

	Sales rank
AISIN SEIKI	81
AJINOMOTO	87
ALPS ELECTRIC	114
AMCOR	136
ASAHI BREWERIES	104
ASAHI CHEMICAL INDUSTRY	40
ASAHI GLASS	30
BOND CORP. HOLDINGS	111
BORAL	143
BRIDGESTONE	19
BROKEN HILL PROPRIETARY	38
CANON	24
CHINESE PETROLEUM	41
CITIZEN WATCH	147
COSMO OIL	27
CRA	72
CSR	149
DAEWOO	9
DAI NIPPON PRINTING	42
DAIDO STEEL	112
DAIHATSU MOTOR	62
DAINIPPON INK & CHEMICALS	68
DAISHOWA PAPER MFG.	129
DOOSAN	146
ELDERS IXL	33
FLETCHER CHALLENGE	55
FUJI ELECTRIC	73
FUJI HEAVY INDUSTRIES	98
FUJI PHOTO FILM	49
FUJITSU	13
FURUKAWA ELECTRIC	65
GENERAL SEKIYU	101
GOLD STAR	76
HINO MOTORS	94
HITACHI	2
HITACHI ZOSEN	135
HONAM OIL REFINERY	107
HONDA MOTOR	7
HOKUSHU PAPER	103
HYOSUNG	71
HYUNDAI HEAVY INDUSTRIES	86
HYUNDAI MOTOR	63
IBM JAPAN	20
IDEMITSU KOSAN	23
ISHIKAWAJIMA-HARIMA HEAVY IND.	45
ISUZU MOTORS	21
ITOHAM FOODS	117
JAPAN TOBACCO	36
JUJO PAPER	90
KANEBO	70
KANTO AUTO WORKS	124
KAO	83
KAWASAKI HEAVY INDUSTRIES	61
KAWASAKI STEEL	35
KIRIN BREWERY	52
KOBE STEEL	32
KOMATSU	56
KONICA	97
KUBOTA	59
KUSTARAY	142
KYOCERA	132
KYOWA HAKKO KOGYO	145
LION	125
MATSUSHITA ELECTRIC INDUSTRIAL	3
MATSUSHITA ELECTRIC WORKS	47
MAZDA MOTOR	12
MEIJI MILK PRODUCTS	109
MEIJI SEIKA	139
MINOLTA CAMERA	137
MITSUBISHI ELECTRIC	11
MITSUBISHI HEAVY INDUSTRIES	15
MITSUBISHI KASEI	37
MITSUBISHI METAL	50
MITSUBISHI MINING & CEMENT	131
MITSUBISHI MOTORS	14
MITSUBISHI OIL	82
MITSUBISHI PETROCHEMICAL	100
MITSUBISHI RAYON	141
MITSUI MINING	150
MITSUI MINING & SMELTING	126
MITSUI PETROCHEMICAL	148
MITSUI TOATSU CHEMICALS	98
MORINAGA MILK INDUSTRY	123
NEC	8
NEWS CORPORATION	69
NICHIRO GYOGYO KAISHA	130
NIPPON LIGHT METAL	93
NIPPON MEAT PACKERS	80
NIPPON MINING	53
NIPPON OIL	16
NIPPON SEIKO	134
NIPPON STEEL	10
NIPPON SUISAN KAISHA	78
NIPPONDENSO	22
NISSAN MOTOR	4
NISSAN SHATAI	108
NISSHIN FLOUR MILLING	121
NISSHIN STEEL	113
NKK	26
OJI PAPER	74
OKI ELECTRIC INDUSTRY	91
OMRON TATEISI ELECTRONICS	127
ONODA CEMENT	116
PACIFIC DUNLOP	118
PETRONAS	84
PIONEER ELECTRONIC	99
PIONEER INTERNATIONAL	120
RICOH	60
SAMSUNG	5
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SANYO ELECTRIC	18
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SHARP	25
SHIN-ETSU CHEMICAL	133
SHIONOGI	144
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SUMITOMO METAL INDUSTRIES	31
SUMITOMO RUBBER	88
SUNKYONG	29
SUZUKI MOTOR	44
TAIYO FISHERY	34
TAKEDA CHEMICAL	64
TDK	95
TEIJIN	75
TOA NENRYO KOGYO	67
TOPPAN PRINTING	46
TORAY INDUSTRIES	54
TOSHIBA	6
TOTO	128
TOYO SASH	110
TOYO SEIKAN	66
TOYOBO	89
TOYODA AUTOMATIC LOOM WORKS	115
TOYOTA AUTO BODY	138
TOYOTA MOTOR	1
UBE INDUSTRIES	77
UNITIKA	122
YAMAHA	92
YAMAHA MOTOR	85
YAMAZAKI BAKING	96
YOKOHAMA RUBBER	119

THE TOP BANKS

FORTUNE's list of the 25 largest banking corporations shows a tidal wave of Japanese money washing across the Pacific, but the socialists who run the Bank of China had the fattest profits.

These 25 banks, ranked by assets, are the biggest in the region, and 23 are Japanese. The others are the government-owned Bank of China (No. 18) in the People's Republic and Hongkong & Shanghai Banking (No. 21) in Hong Kong. The assets of Japan's top ten banks have grown 62% since 1986 to $2.9 trillion, and only partly because of the appreciation of the yen. The rest of the growth has come through acquisitions and aggressive expansion. By contrast, the ten largest U.S. banks have assets totaling $859.1 billion.

The most profitable was the Bank of China, which had net income of $1.1 billion last year. But it's worth noting that the bank has a monopoly on foreign exchange for China. America's Citicorp, which has plenty of competition, earned $1.8 billion in 1988.

The stunning performance of some Japanese banks shines through in the tables on the following page showing return on stockholders' equity and assets per employee. Norinchukin Bank (No. 7) had the best return on equity, 19.4%, and was second in assets per employee. Three Japanese banks, Toyo Trust (No. 19), Zenshinren (No. 25), and Yasuda Trust (No. 16), all had returns above 15%. Sumitomo Bank (No. 13) had the biggest earnings rebound, up 208.2% to $1 billion.

The Japanese banks are increasing their stakes in the U.S. Dai-Ichi Kangyo, the No. 1 bank, has agreed to buy 60% of CIT Group, a finance company, and 4.9% of Manufacturers Hanover in New York. Japanese banks account for 25% of banking assets in California, according to the San Francisco Federal Reserve. They've been busy at home too. In August, Mitsui Bank (No. 9) announced that it planned to merge with Taiyo Kobe (No. 14). Had the merger occurred last year, the combined bank would have been No. 2. – **Joan C. Viebranz**

Rank	BANK Ranked by assets	COUNTRY	ASSETS[1] $ Millions	DEPOSITS[2] $ Millions	Rank	LOANS[3] $ Millions	NET INCOME[4] $ Millions	STOCK-HOLDERS' EQUITY[5] $ Millions	EMPLOY-EES
1	DAI-ICHI KANGYO BANK[6]	JAPAN	379,322.8	283,185.4	1	212,719.0	1,095.8	8,567.5	18,563
2	SUMITOMO BANK[6]	JAPAN	363,232.6	267,993.2	2	194,615.4	1,023.5	8,342.2	16,516
3	FUJI BANK[6]	JAPAN	360,529.8	258,574.7	3	184,254.3	904.2	8,888.3	14,542
4	MITSUBISHI BANK[6]	JAPAN	348,999.0	251,146.9	4	185,062.9	875.4	8,286.0	14,296
5	SANWA BANK[6]	JAPAN	330,705.4	246,625.5	5	183,856.3	898.4	7,541.1	14,337
6	INDUSTRIAL BANK OF JAPAN[6]	JAPAN	272,919.3	216,615.9	6	146,857.2	472.0	6,273.2	5,342
7	NORINCHUKIN BANK[6,7]	JAPAN	235,944.3	214,256.7	7	97,744.9	249.0	1,283.9	3,163
8	TOKAI BANK[6]	JAPAN	227,644.3	172,072.5	9	122,260.5	480.0	5,140.8	12,308
9	MITSUI BANK[6]	JAPAN	211,358.6	152,698.9	11	123,313.2	572.1	4,601.7	10,185
10	MITSUBISHI TRUST & BANKING[6,7]	JAPAN	208,341.7	178,030.5	8	94,690.9	472.0	3,304.6	6,050
11	BANK OF TOKYO[6]	JAPAN	185,428.8	129,368.4	15	96,526.1	342.1	3,941.6	13,159
12	LONG-TERM CREDIT BANK OF JAPAN[6]	JAPAN	184,752.9	147,167.6	13	116,072.9	373.6	4,176.2	3,336
13	SUMITOMO TRUST & BANKING[6,7]	JAPAN	182,529.1	162,201.0	10	80,513.6	455.7	3,290.3	6,554
14	TAIYO KOBE BANK[6,7]	JAPAN	175,470.4	131,757.8	14	112,057.7	298.6	3,251.4	13,218
15	MITSUI TRUST & BANKING[6]	JAPAN	174,943.5	151,352.7	12	80,084.5	389.1	2,661.9	6,345
16	YASUDA TRUST & BANKING[6,7]	JAPAN	167,847.6	126,845.0	16	73,601.8	306.9	2,013.1	5,358
17	DAIWA BANK[6,7]	JAPAN	150,733.7	76,790.4	23	79,934.9	253.9	2,641.7	8,865
18	BANK OF CHINA[8]	CHINA	149,997.5	60,068.4	25	51,114.7	1,132.6	6,603.1	43,600
19	TOYO TRUST & BANKING[6,7]	JAPAN	120,873.1	109,130.6	17	49,374.4	272.3	1,717.4	5,142
20	NIPPON CREDIT BANK[6,7]	JAPAN	115,176.8	92,108.1	19	71,644.0	222.9	2,403.5	2,283
21	HONGKONG & SHANGHAI BANKING	HONG KONG	113,165.7	101,886.9	18	58,476.4	350.7	4,601.1	52,414
22	KYOWA BANK[6]	JAPAN	110,613.7	83,621.8	21	65,372.9	258.3	2,755.0	8,287
23	SHOKO CHUKIN BANK[6,9]	JAPAN	93,210.0	84,031.6	20	75,986.7	44.9	2,212.4	6,316
24	SAITAMA BANK[6,7]	JAPAN	93,168.3	70,988.5	24	54,047.6	173.7	2,106.5	8,054
25	ZENSHINREN BANK[6]	JAPAN	86,874.6	79,358.2	22	41,260.2	190.5	1,236.3	980
TOTALS			5,043,782.5	3,847,852.2		2,671,442.8	12,288.2	107,941.3	299,313

Footnotes to the Banks

[1] Asset figures have been converted into U.S. dollars using the market rate at each bank's fiscal year-end, which is December 31, 1988, unless otherwise noted. Chuo Trust, Daiwa, Mitsubishi Trust, and Yasuda Trust include holdings of major trusts in their assets.

[2] Deposit figures have been converted into U.S. dollars using the market rate at each bank's fiscal year-end. Figures for Bank of Tokyo, Industrial Bank of Japan, Long-Term Credit Bank of Japan, and Norinchukin Bank include their own bonds.

[3] Loan figures have been converted into U.S. dollars using the market rate at each bank's fiscal year-end. Figures include loans to banks and money at call or available on short notice.

[4] Net income figures have been converted into U.S. dollars using the average rate in the official exchange market during the bank's fiscal year. Net income is after taxes and excludes minority interest.

[5] Stockholders' equity figures have been converted into U.S. dollars using the market rate at each bank's fiscal year-end. Equity is the sum of capital stock, surplus, and retained earnings.

[6] Figures are for fiscal year ended March 31, 1988.

[7] Figures are unconsolidated.

[8] Government-owned.

Return on Stockholders' Equity

The ten highest

	Rank	
NORINCHUKIN BANK	7	19.4%
BANK OF CHINA	18	17.2
TOYO TRUST & BANKING	19	15.9
ZENSHINREN BANK	25	15.4
YASUDA TRUST & BANKING	16	15.2
MITSUBISHI TRUST & BANKING	10	14.3
MITSUI TRUST & BANKING	15	13.9
SUMITOMO TRUST & BANKING	13	13.8
DAI-ICHI KANGYO BANK	1	12.8
MITSUI BANK	9	12.4

Change in Net Income

The ten biggest increases*

	Rank	1987-88
SUMITOMO BANK	2	208.2%
DAI-ICHI KANGYO BANK	1	85.0
NORINCHUKIN BANK	7	77.3
SANWA BANK	5	71.4
FUJI BANK	3	65.1
MITSUI BANK	9	63.1
NIPPON CREDIT BANK	20	61.3
TOKAI BANK	8	60.7
TAIYO KOBE BANK	14	53.3
KYOWA BANK	22	52.7

The one decrease*

BANK OF TOKYO	11	0.9%

*Percent increase or decrease of net income. Does not include money losers.

Assets per Employee

The ten highest

	Rank	
ZENSHINREN BANK	25	$88,647,528
NORINCHUKIN BANK	7	74,595,095
LONG-TERM CREDIT OF JAPAN	12	55,381,565
INDUSTRIAL BANK OF JAPAN	6	51,089,163
NIPPON CREDIT BANK	20	50,449,749
MITSUBISHI TRUST	10	34,436,647
YASUDA TRUST & BANKING	16	31,326,540
SUMITOMO TRUST & BANKING	13	27,850,024
MITSUI TRUST & BANKING	15	27,571,866
FUJI BANK	3	24,792,308

The five lowest

KYOWA BANK	22	13,347,856
TAIYO KOBE BANK	14	13,275,107
SAITAMA BANK	24	11,567,955
BANK OF CHINA	18	3,440,309
HONGKONG & SHANGHAI	21	2,159,074

The Banks by Country

	Total	Largest bank	1988 assets in millions	Rank
CHINA	1	BANK OF CHINA	$149,997.5	18
HONG KONG	1	HONGKONG & SHANGHAI BANKING	$113,165.7	21
JAPAN	23	DAI-ICHI KANGYO BANK	$379,322.8	1

Index to the Banks

	Rank
BANK OF CHINA	18
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DAI-ICHI KANGYO BANK	1
DAIWA BANK	17
FUJI BANK	3
HONGKONG & SHANGHAI BANKING	21
INDUSTRIAL BANK OF JAPAN	6
KYOWA BANK	22
LONG-TERM CREDIT BANK OF JAPAN	12
MITSUBISHI BANK	4
MITSUBISHI TRUST & BANKING	10
MITSUI BANK	9
MITSUI TRUST & BANKING	15
NIPPON CREDIT BANK	20
NORINCHUKIN BANK	7
SAITAMA BANK	24
SANWA BANK	5
SHOKO CHUKIN BANK	23
SUMITOMO BANK	2
SUMITOMO TRUST & BANKING	13
TAIYO KOBE BANK	14
TOKAI BANK	8
TOYO TRUST & BANKING	19
YASUDA TRUST & BANKING	16
ZENSHINREN BANK	25

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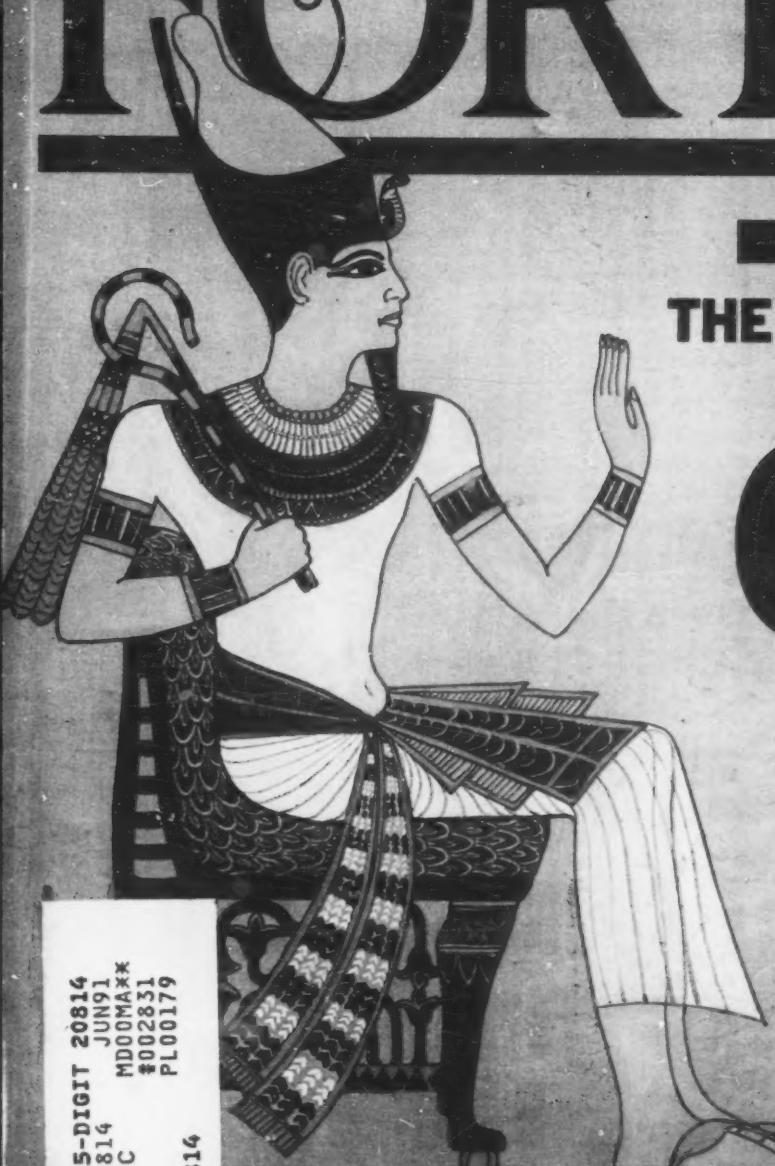

THE TRUST GAP

Pharaoh in all his glory would have envied today's CEOs their perquisites and ever-sweetening pay. Too busy living the cosseted life, America's managerial elite have lost touch with the humble employee. Workers' faith in top management is collapsing. CEOs who don't come down from the heights are in for trouble.

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ABOVE: Bosses, Teamsters, and longshoremen at Preston Trucking in Harrison, New Jersey, photographed by Andy Freeberg.

COVER: Painting by Kinuko Y. Craft.

At Preston Trucking, workers give their all primarily because they believe management gives them full attention and respect. PAGE 56

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Corporate America is split by a widening gulf between top management and everybody else—in pay, in perks, in self-importance. People below the acme of the pyramid trust those on top just about as far as they can throw a Gulfstream IV, with shower. The attitudes of middle managers are becoming more like those of disaffected hourly workers. Here's how to regain employees' confidence. *by Alan Farnham*

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JAPAN'S NEW CARS 82

They're large, powerful, more rounded and stylish, and packed with electronic goodies. For big spenders, Nissan has a sedan that can cost $45,000 with options. *by Sally Solo*

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By stocking up wholesalers with more smokes than they could promptly resell, RJR Nabisco created a ton of bogus profits. Its competitors were in this game too. *by Carol J. Loomis*

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VOL. 120, NO. 14

"You can immerse a mouse in water that's been treated with perfluorocarbons, and he'll be able to breathe."

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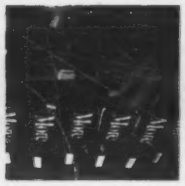

"It's like getting in with a loan shark."

PAGE 89

"The pursuit of ideas is the only thing that matters. You can find people to do almost everything else."

PAGE 116

"Education is not a priority to compete with defense, deficits, drugs, or AIDS. It is the solution to those problems."

PAGE 137

"Japan's educational system, far from deserving emulation, stands in need of the most drastic reform."

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"It's hard to use any term other than friendly when the offer is all cash at a 50% premium over market."

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HOW TO HELP AMERICA'S SCHOOLS 137

In the global marketplace, mental might increasingly separates winners from losers. A FORTUNE conference of corporate leaders, educators, and politicians suggests a wealth of ways to keep U.S. education reform rolling. Above all, they say, raise expectations. *by Nancy J. Perry*

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What's good for business—namely competition—can be good for public education. Done right, plans that let families and teachers pick their schools get high marks. Public school choice is simply the hottest item on the education reform agenda today *by Jaclyn Fierman*

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You won't find closed-circuit TV or the kind of flashy media centers so popular in affluent schools in the U.S. What you do see is surprising dedication. But many Japanese are becoming dissatisfied with the system. They argue that the country needs fewer worker bees skilled at memorizing and more creative thinkers who can question established ideas. *by Carla Rapoport*

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EDITOR'S DESK

WHAT can private business—and specifically you and I—do to help alleviate the crisis in America's public schools? Searching for direct, workable answers and practical solutions, FORTUNE gathered together more than 200 leaders of business, government, labor, and academe in Washington, D.C., for our second annual Education Summit. In the year since our precedent-setting 1988 conference and the provocative cover story that followed it, education has risen to the top of the national agenda.

At this year's two-day session, which was organized with the help of consultant Rhea Stein and sales promotion manager Carol Ahlers, Apple Computer Chairman John Sculley made the point that education is key to the survival of the nation's economy, while New Jersey Governor Thomas Kean said that it is essential to the survival of America's democracy. Chairmen and presidents from Merrill Lynch, the New England insurance company, U.S. West, and Eastman Kodak explained what their companies are doing to help schools and students in their own communities.

Our special report on education, beginning on page 137, elaborates on ways that companies and individuals can combat the crisis. The project was supervised by assistant managing editor Ann Morrison and senior editor Richard I. Kirkland. The lead story in the package examines the need to lengthen the school day and expand the school year, raise the status (and sometimes the pay) of teachers, and make preschool programs available to many more youngsters. The article was written by Nancy Perry, our education specialist, who will continue to cover the beat in her new assignment as FORTUNE's Los Angeles bureau chief.

HOWARD E. SIMMONS
Nancy Perry

JOE BURN
Alan Farnham

ANDY FREEBERG
Carol Loomis

The second piece, "Giving Parents a Choice of Schools" by Jaclyn Fierman, herself a new parent, analyzes the hottest trend in public school reform. From Tokyo, Carla Rapoport reports in "A Look Inside a Japanese School" the surprising fact that the Japanese are trying to reform their schools too—to promote more creativity among their highly motivated, highly disciplined students.

Meanwhile, our cover story beginning on page 56 addresses another kind of problem: "The Trust Gap." Writer Alan Farnham, working with reporter Andrew Erdman, explains why corporate America is split by a growing gulf between top management and everybody else—and how companies can regain employees' confidence. Assistant managing editor Walter Kiechel, who oversaw the story, says, "Alan is the first to fully explore the dramatic escalation in CEOs' pay with the steady decline in the worker morale. And he has done it with wit and an ear for the English language."

In another remarkable story in this issue, writer Carol Loomis draws on her considerable knowledge of accounting to expose "The $600 Million Cigarette Scam." Assisted by reporter Mark Colodny, she documents precisely how RJR Nabisco, indeed the entire tobacco industry, misled shareholders by artificially pumping up sales, profits, and market share. Julie Connelly, who edited the story, says, "This is the parable of a company that perverted its business to maintain market share."

Marshall Loeb
MANAGING EDITOR

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WHO BUSINESS BOSSES HATE MOST

Ask America's leading corporate chief executives which professions help society—and then stand back, especially if you work anywhere near Wall Street. ■ *by Terence P. Paré*

DO AMERICA'S TOP CEOs like investment bankers? Yes, the way W. C. Fields liked children—parboiled. As takeovers and leveraged buyouts continue to proliferate while some from the past come to grief, U.S. business leaders conclude overwhelmingly that investment bankers are overpaid and more interested in thickening their wallets with fees than in advancing clients' interests. No, the vast majority of CEOs do not want government meddling with Wall Street pay. But while a sizable proportion dissent, most feel that the dealmaking engineered by financial types is hobbling America's ability to compete globally. The true contributors to the commonweal? Executives—and the clergy.

Q A **Which of these professionals make a major contribution to the well-being of society and the economy?***

Manufacturing executives	47%
Clergy	44%
Commercial bankers	32%
Executives of service corporations	30%
Accountants	18%
Journalists	7%
Investment bankers	6%
Management consultants	6%
Executives of search firms	4%
Stock analysts	4%
Investment consultants	2%

*Rated eight or higher on a ten-point scale of how much each contributes to the well-being of society and the economy.

These are among the most notable findings in the latest FORTUNE 500 CEO Poll. Clark Martire & Bartolomeo, an independent opinion research firm, conducted the survey of 206 chief executive officers of FORTUNE 500 and FORTUNE Service 500 companies between October 25 and November 3.

REPORTER ASSOCIATE *Reed Abelson*

Given a list of professionals, CEOs chose executives like themselves as major contributors to society far more often than they named anybody connected with Wall Street. Manufacturing executives were singled out most often, beating all comers including the clergy. Sacrilege? No, partly a public relations problem. Many executives note that with Jim Bakker in the slammer and other evangelists touched by scandal, the man of the cloth's image is a bit stained. N. Berne Hart, chief of United Banks of Colorado, explains the relative rankings as a problem of accounting: "With manufacturing executives it's so many tons of this or so many thousands of that. I don't know how a priest or a clergyman adds up what he does."

Other workers whose output is hard to evaluate ranked low in the eyes of the CEOs. Only 7% of them said that journalists made major contributions to society. Management consultants were no more esteemed than investment bankers, with 6%. Even less well thought of were stock analysts and headhunters. A mere 2% of the chiefs felt that investment consultants made large contributions to society. Explains Raymond C. Burton Jr., boss of Trailer Train, a railcar cooperative: "I don't think any of us really knows what is going to be the right thing to invest in. But investment consultants parade themselves as knowing."

The CEOs reserve their most bitter bile for investment bankers. Fully 95% believe investment bankers emphasize fees rather than the long-term interests of clients. Loyalty is dead. Says Charles F. Casey of plastic-container maker Constar International: "The switch over the years from a relationship-oriented industry to a transaction orientation has really put a credibility gap between the investment banker and his client." The investment banker who helps you with an initial public offering today could come knocking with a hostile tender offer tomorrow. Says Ryal R. Poppa of computer equipment manufacturer Storage Technology: "You just can't trust them as you could in the past."

"Employees are not getting anywhere near the returns investment bankers are."

RICHARD F. TEERLINK
Harley-Davidson

JAMES SCHNEPF

Edmund M. Carpenter of electronics outfit General Signal sees another kind of change: "In some cases investment bankers are making the market rather than responding to the needs of the market." The equity stakes investment bankers commonly take these days trouble Richard F. Teerlink of Harley-Davidson, the motorcycle maker. How can investment bankers give an objec-

"What's going to happen to the manufacturing base of our country?"

ALEXANDER F. GIACCO
Himont

JIM LUKOSKI—B. PICTURES

tive opinion of a deal if they will be affected by their decision? Says Teerlink: "There's a potential for a conflict of interest."

The lightning rod for much of this excoriation is salary. Most executives would kick Wall Streeters right in the pocketbook. Teerlink is burned not by how much the investment bankers earn but by how little others are paid: "The real people who are investing in companies are the employees who are putting in sweat equity, and they're not getting anywhere near the returns investment bankers are."

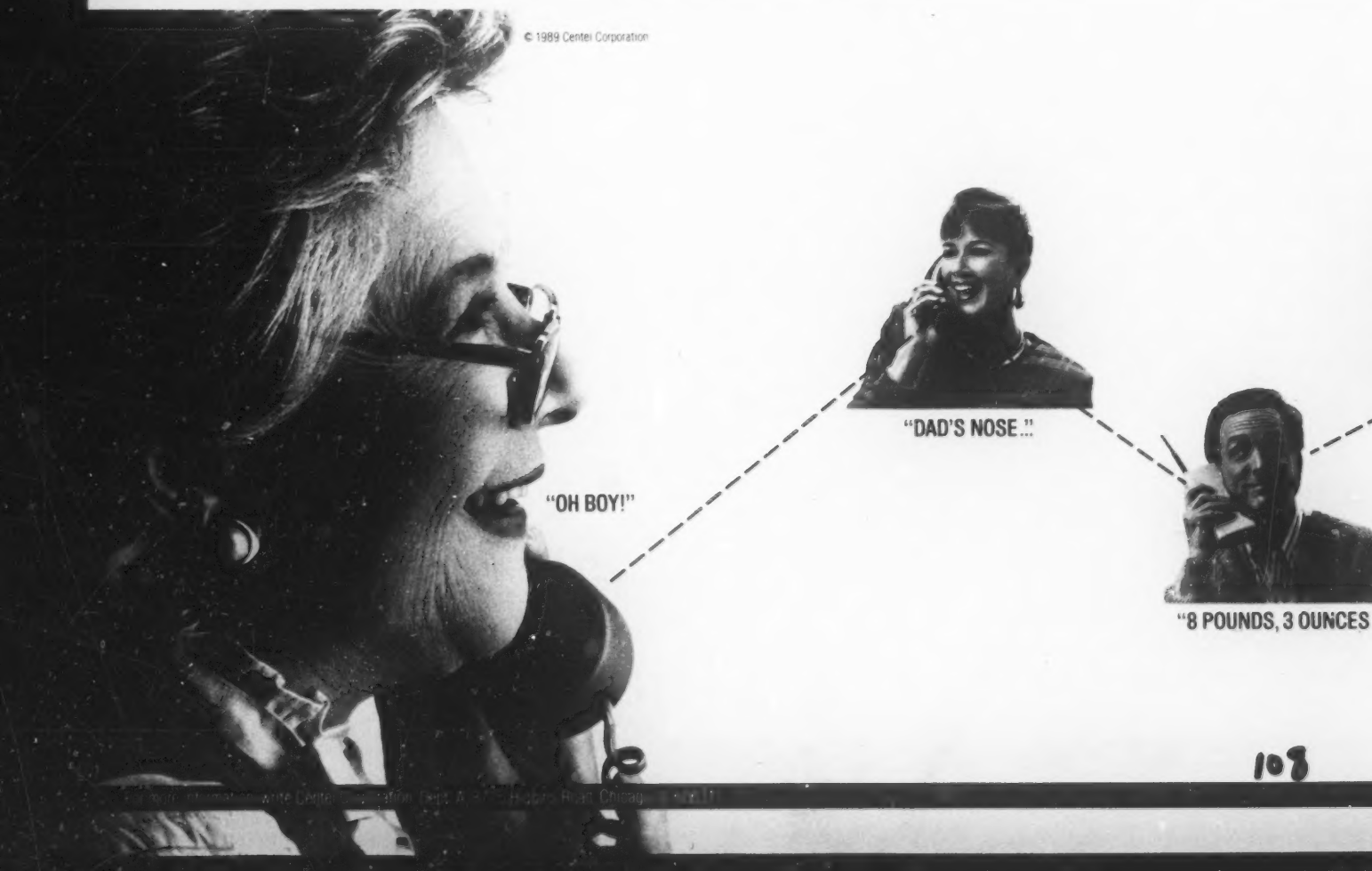
SOCIETY, OF COURSE, does not necessarily suffer because a small number of its members are paid more than they are worth. But 68% of CEOs feel that the deals driven by investment bankers hurt America's ability to compete in the global market. "Instead of building industries, investment bankers are making money by tearing them down," says James C. Cotting, boss of truckmaker Navistar International. The chiefs particularly decry the emphasis that frenetic mergers and acquisitions place on the short term—called the Maypo syndrome, playing off U.S. Budget Director Richard Darman's references to old TV commercials for the breakfast cereal in which a misbegotten little monster demands that his mother serve his Maypo *now*. CEOs feel that unless they deliver attractive returns immediately, an investment banker could come calling with a takeover bid in a briefcase thinner than the smile on his face.

Result, they say: The best-laid long-term plans, vital in a world increasingly dominated by the far-sighted Japanese, will inevitably go awry. W. R. Wilson, chief executive of steelmaker Lukens, says, "It's hard to keep your eye on the ball long-term if you have to keep looking quarter to quarter." Bausch & Lomb chief Daniel E. Gill concurs: "Any CEO knows that for a year or two, maybe even three or four years, you can show tremendous profitability quarter after quarter. All you do is curtail maintenance, curtail advertising of new products, and cut out technology investments."

Like many CEOs, Tom E. Smith of Food Lion, North Carolina's supersuccessful grocery chain, worries about the wider economic impact of nonstop dealmaking: "So much emphasis has been placed on Wall Street and leveraged buyouts that it has detracted from good, sound investments. That hurts the economy." Alexander F. Giacco of chemical maker Himont thinks some U.S. industry could end up out of business. He says, "You push too many of these deals and you have to ask, 'What's going to happen to the manufacturing base of our country?' " Paul R. Roedel, head of specialty-metals maker Carpenter Technology, warns, "We will not feel the

Q **Do you feel investment bankers are overpaid?**
A
Yes **95%**
No **5%**

Q **If so, would you recommend government regulation of these fees?**
A
Yes **7%**
No **87%**
Not sure **6%**



full impact of this phenomenon for many years, and then I am afraid it will be too late."

Not that these corporate bosses oppose all mergers and acquisitions. They despise deals created for the deals' sake when investment bankers whip rival suitors into an acquisitive fury. But Giacco says, "Each of us can think of an acquisition we've made or an acquisition we'd like to make." For that, investment bankers are necessary, like it or not. Capping the fees investment bankers earn could slow down the M&A action, yet 87% of CEOs oppose any kind of government interference in the market. Previous polls show that these chiefs reject most government intervention in business. John B. McCoy of Banc One offers a more specific reason for leaving dealmaking alone: "If we curtail mergers and acquisitions, I don't think our companies will be as strong," he says, on the theory that the Darwinian struggle between predators and potential prey keeps companies fit. The price of that benefit is putting up with the fee-crazed hotshots of investment banking.

A minority of the surveyed CEOs, 22%, follow a different line of reasoning, contending that the takeover wave is fundamentally good for the U.S. because it forces companies to cut fat, restructure, and become more efficient. Many economists endorse this view—but then they don't have jobs at stake when the raider comes knocking.

In the movie *Wall Street*, financier Gordon Gekko tells how greed is good. The CEOs do not agree, as their comments and their rankings demonstrate. Pointing to the second-most-esteemed profession on the list, Trailer Train's Burton says, "The clergy can tell you all about greed." F

Q **Do you believe investment bankers are putting more emphasis on deals and fees than on the long-term interests of their corporate clients?**

A

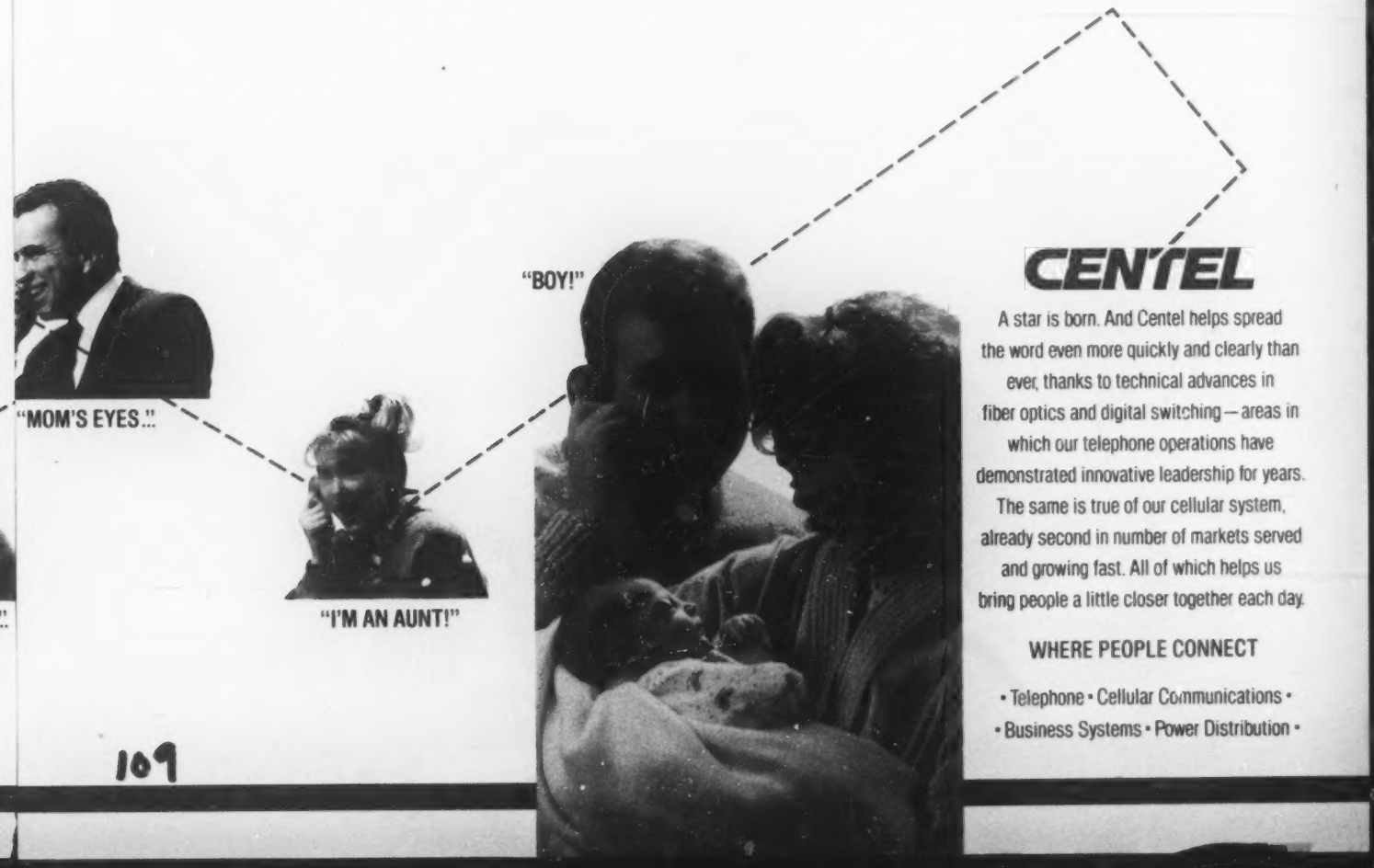
Yes	95%
No	5%

Q **Do you think that Wall Street's merger and acquisition activity helps or hurts America's ability to compete in the global market? Why?***

A

It has hurt	68%
Too much emphasis on short term	36%
Too much debt	16%
Too much emphasis on finance rather than production	14%
Less attention given to managing the company	9%
Less money for R&D	9%
Other	10%
It has helped	22%
Improved efficiency	11%
Forced global competitiveness	11%
Restructured assets more effectively	3%
Restructured positions within companies	2%
Other	2%

*Percentages total more than 100% because of multiple responses.



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A LOOK INSIDE A JAPANESE SCHOOL

Don't expect fancy fixtures or lots of expensive electronic gadgets. But you will find plenty of discipline and determination—it's back to basics. ■ *by Carla Rapoport*

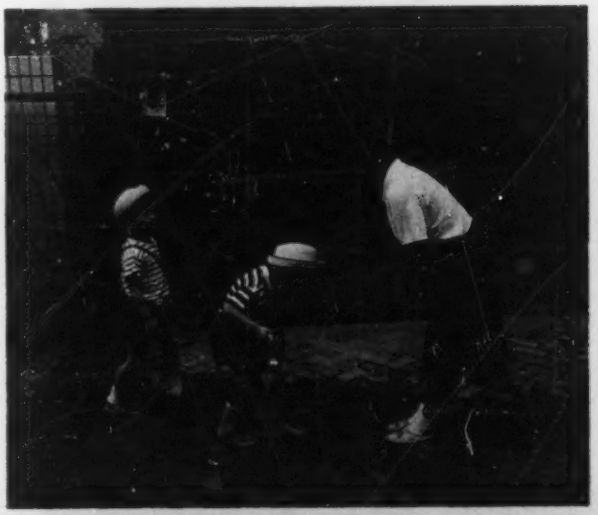
JAPAN'S STUDENTS score so high against other youngsters in standardized international tests, and its schools turn out such able workers and managers, that the country's educational system has become the envy of the world. But what really happens inside a Japanese elementary school? On these pages you can get a glimpse at classes for youngsters age 6 to 12 at the Azabu public school in central Tokyo.

There isn't much glitz. Despite Japan's newfound wealth, the government has not lavished more money on education. Japanese schools, like Japanese factories, are unadorned, functional places. You won't find closed-circuit TV or the kind of flashy media centers so popular in affluent suburban schools in the U.S.

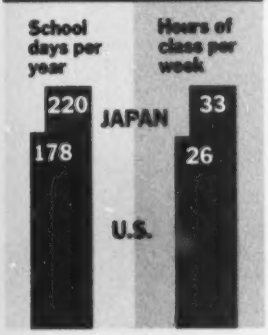
What you do see is surprising dedication. There are rows of neatly dressed youngsters (elementary schools don't require uniforms) in large classrooms paying close attention to their teachers. If a slogan could be written over any Japanese school, it would be *gambatte*—try your best. Japanese children may be no smarter than those elsewhere, but they undoubtedly work harder. They spend more time in school than do Americans—an average of 220 days a year, vs. 178—and they have more homework. They memorize more too.

Partly they have to. Mastering the Japanese writing system, which is based on more than 2,000 Chinese characters, requires a great deal of memorization. The third-graders on this page were able to write their names only this year. Learning enough characters to read most newspapers and books takes until the end of ninth grade. But they *will* manage it; literacy in Japan is virtually universal. And in math and science these children, along with others across Japan, will streak

REPORTER ASSOCIATE *Cindy Mikami*



How they compare



Lessons in manners begin in kindergarten, with a bow to the teacher each day.

Science projects are a big hit with third-graders in Azabu school. That's a helmet beetle.

PHOTOGRAPHS BY JOE MCNALLY—SYGMA

This opinion board, where kids post their views on school programs, is a recent innovation.

Classes in Japan are large—and orderly. But no student gets much individual attention.

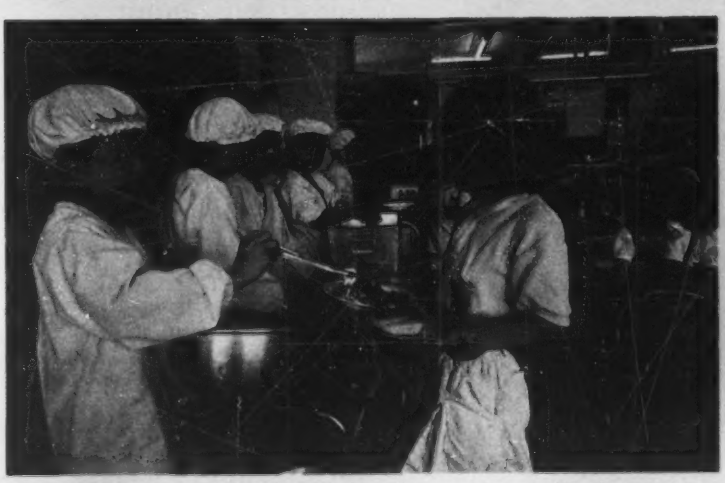
ahead of their American counterparts.

Despite these successes, many Japanese are becoming dissatisfied with the system. They note that Japan is changing and no longer needs legions of worker bees. Rather, they argue, the country now requires more thinkers, creative people, and students who can question established ideas, not merely memorize them. Says professor Teruhisa Horio, dean of education at Tokyo University: "Our educational system, far from deserving emulation, stands in need of the most drastic reform."

One problem is that a person's place in Japanese society is still largely determined by educational achievements. Children know that their chances of entering a major university and getting a good job depend almost entirely on the results of their high school exams. The pressure is so intense that by the fourth or fifth grade most children start attending after-school cram classes. This kind of one-track goal inhibits independent thought, say the critics.

In typical Japanese fashion, blue-ribbon committees have been formed and government studies launched on how schools can become less rigid. Says Shigenori Yano, chief of textbook planning for the Ministry of Education: "Up until recent times conformity was necessary to get as many people as possible through the educational system. Now that job is complete, so we have to go a step further. Our purpose will be to stimulate creativity."

By 1992, he explains, Japanese children will get something that Americans have long been familiar with: choice. Starting in junior high, brighter children will be allowed to take special advanced courses in science, foreign languages, and math. In



Without a cafeteria, students eat in the classroom, served by classmates.

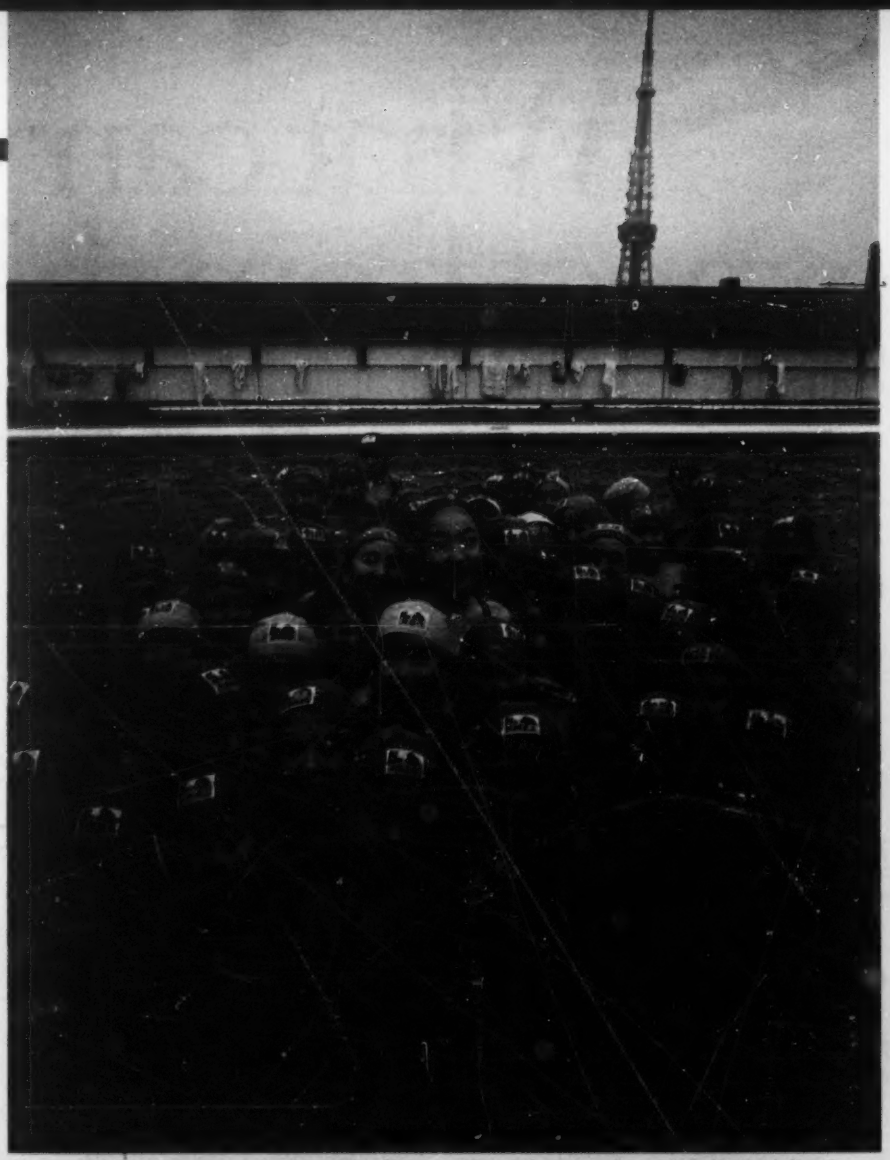
By first grade, kids have learned to listen to the teacher.

senior high, students studying English will be able break out of the grammar/memorization loop and choose from a range of courses including essay writing and conversation.

Some test programs have already begun in elementary schools. A few years ago the government designated Azabu as an experimental school. Azabu chooses themes each year and gears its curriculum and special events accordingly. Two recent themes: learning to live in an international society and learning to communicate more openly with others.

While these may sound rather tame to Americans, educators in Japan have long emphasized the opposite. They have encouraged children to believe that as Japanese they are unique in the world and that nonverbal communication is often more important in relationships than speaking. To help students communicate more easily, the school held a series of assemblies. After a brief lecture, students were told to discuss the topic. No one said anything at first; a lively exchange developed only after a few months.

Nobuyuki Terashi, principal of Azabu, says a switch to a system based on choices is long overdue. But the changeover won't be easy. Observes Masako Kubota, a fifth-grade teacher in the school: "I have 43 pupils in my class. That's too many. I can't try to encourage their individualism. Japanese teachers are taught how to control a group, and this is our advantage. But it's our dream to have smaller classes and work one-on-one with kids." ■



Class spirit is strong, even in the water. The pool is on the school's roof. Self-discipline is part of kendo (below), an ancient martial art, which is taught in after-school classes.

■ RETAILERS FOR THE 1990s • THE NEW EUROPE • TRUMP'S TROUBLES ■

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HOW AMERICA CAN TRIUMPH

By balancing the budget and raising productivity, the U.S. can lead the world into the 21st century. Here's what to do.

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America has to show the way to an open global economy by example as well as by rhetoric.
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ABOVE: A mass swearing-in of new U.S. citizens in Miami photographed by Carol Guzy/ Miami *Herald*–Black Star.

COVER: The American flag photographed by F. Selb–H. Armstrong Roberts.

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"We recognize that we are swimming in uncharted waters."

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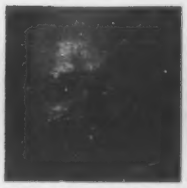

"It has been slogging hard work."

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"Twenty-seven percent of the people I operate on for a coronary bypass have normal cholesterol levels."

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"You know I don't take 10 cents out of my own bank to do a deal."

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"The only long-term solution is to find ways to increase the employment and earnings of black men."

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EDITOR'S DESK

JAMES (LUCKY) SHARP

Cover editor Burck and writer Richman: the happy consequences of sounder policy

TIRED OF HEARING all the laments about the sad state of the U.S. and its economy? We aren't productive enough. We can't save. We don't export the way we used to. The end of the American century is nigh. Well, it isn't necessarily so.

In our cover story, writer Louis Richman shows that the U.S. can lead and prosper in the 21st century. He tackles a basic question: What, precisely, would the economy look like if we did the right things about productivity and the federal deficit? "Success doesn't require heroic undertakings or spartan behavior," says senior editor Charles G. Burck, who conceived the story. "It rests on behavior that we've exhibited in the past."

CHRIS DAVIES—NETWORK

Richard Kirkland

Richman, assisted on the story by reporter Richard Teitelbaum, was intrigued by the central paradox of American post-war experience. "The U.S. finds itself at the beginning of a new decade having largely succeeded in all it set out to do at the end of World War II," he says. "Yet it is still troubled by a sense of relative decline." He asked the St. Louis economic forecasting firm of Laurence H. Meyer & Associates to model the economic consequences of sounder policy. The potential benefits are enormous. And how to get there may surprise you.

Another story in this issue focuses on what the revolutionary changes in Europe, East and West, mean for business. Our Politics & Policy editor, Richard I. Kirkland, drew upon expert contacts he had developed in four years as our European editor. His article offers a business Baedeker of Eastern Europe, some do's and don'ts, and the factors that any company can't afford to ignore.

One of our most popular annual features is Products of the Year, which you saw in our last issue. But why not run a collection of great gizmos more often? With this issue, we do just that, in a new feature titled Products to Watch (page 148). Price, as they say, is no object. Nor is size. What counts is that the product is innovative and at least shows signs of flying off the shelves. In our maiden voyage, associate editor Edward Baig takes us through products ranging from $1.89 to more than $30,000.

Marshall Loeb

MANAGING EDITOR

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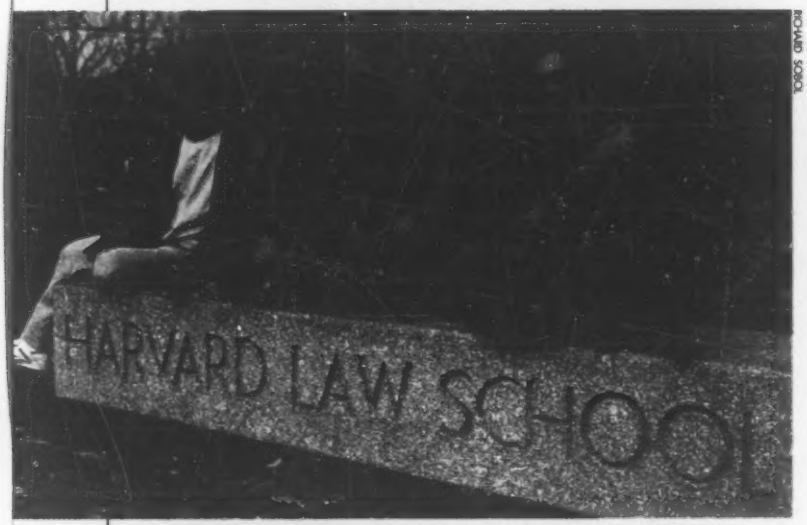


RICHARD SOBOL

Channeling resources: Ferrell (second from left) and classmates

HARVARD LAW'S PRO BONO STUDENTS

■ It is time to rethink the notion that fast-track law school students are motivated by greed alone. The National Association of Students Against Homelessness (Nasah) has raised some $38,000 for the needy by touching a philanthropic nerve in the law firms that want to hire them.

The idea was born last year when Harvard law student Joseph Anderson was working as a summer associate with a New York City law firm. A homeless man dropped to his knees and begged for food money as Anderson headed home after a meal in the SoHo district. Anderson was struck by the disparity between the frills lavished on him by law firms that had interviewed him and the poverty of the homeless. Says he: "I saw the excess as a resource that could be channeled to other means."

Other law students had similar experiences. So they cooked up a plan whereby students on the interview circuit may opt to stay in modest hotels and eat in less expensive restaurants. The interviewing firms donate the difference in costs to shelters for the homeless. When students fly to interviews, they book through a travel agency that turns over 50% of the commission to the needy. More than 600 of Harvard law school's 1,100 second- and third-year students who are now job hunting take part in the program. Says student Lisa Ferrell, 26, a director of the program: "There's a massive response that proves we care." Ferrell says she has been saving $30 a night on hotels while on the road interviewing and $45 a lunch for her and prospective employers. With four interviews so far, that comes to $300.

Students at 13 other law schools, from Yale to UCLA, have set up Nasah chapters. And about 150 law firms, including New York City's **Debevoise & Plimpton** and Boston's **Bingham Dana & Gould**, are participating. **– Peter Nulty**

SELLING THE TWIN CITIES

■ One evening this summer, Jodi Dehli, a management consultant with **Deloitte & Touche** in Minneapolis, was canoeing with an investment banker friend on one of Minnesota's fabled 10,000 lakes when they started to laugh: Their business school classmates who'd taken jobs in New York were probably still fighting the subway.

They decided to spread the word that Minneapolis and its twin city, St. Paul, offer a lot to MBAs. Says Dehli, 27: "We decided to market the lifestyle."

Eleven corporations with headquarters or branches in the Twin Cities—**Pillsbury**, **Northwest Airlines**, **General Mills**, **Medtronic**, and **Coopers & Lybrand** among them—liked the idea. They agreed to contribute $2,500 each to underwrite a plan to visit five top business schools in an effort to convince newly minted MBAs that the cities are the place for them. Dehli's employer gave her five days off.

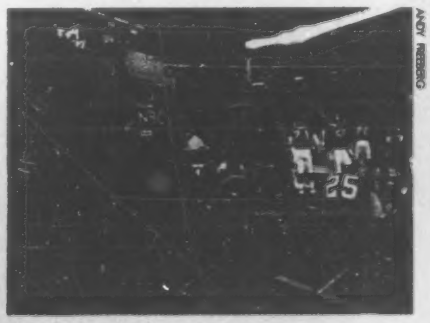
The Twin Cities Recruiting Campaign—led by Dehli, her canoeing friend Todd Peterson, and four other local MBAs—hit the road in November. They spoke to students at Harvard, Wharton, Kellogg, Stanford, and the University of Chicago's graduate school of business, Dehli's alma mater. The response has been good. More than 20 students contacted Dehli's firm alone, requesting job interviews. "Students at business schools are older than they used to be," she says. "There are more dual-career couples now. Where one lives and the quality of life a city has to offer are more of an issue than they used to be." **– Rahul Jacob**

STEVE WOIT

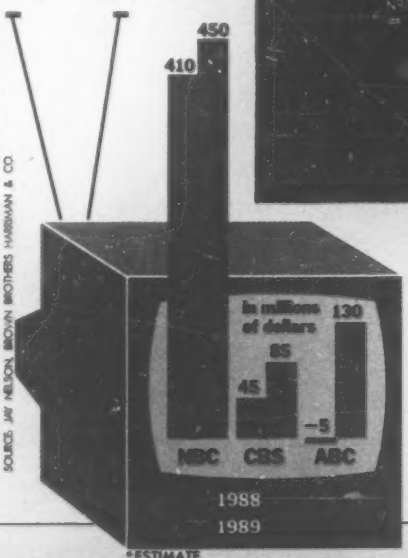
Dehli, lakeside near her home

WILD SPORTS BETS AT THE NETWORKS

■ The bidding war for the rights to televise sports events has turned furious. CBS will lay out $1 billion for exclusive rights to broadcast National Collegiate Athletic Association basketball tournaments over seven seasons, and other NCAA events. Among other recent deals: CBS also will pay $1.1 billion to broadcast four



ANDY FREEBERG



SOURCES: JAY NELSON BROWN BROTHERS HARRIMAN & CO.

GAME SHOWS
NBC and CBS are betting billions that sports events will win new viewers—and, eventually, profits. But will they really ever get their money back?

years of major league baseball. NBC, meanwhile, will lay out $600 million for four seasons of National Basketball Association games through 1993-94 and $401 million for the 1992 Barcelona Olympics.

ABC, which dropped out of several recent contests, seems numbed by these prices. Says Dennis Swanson, president of ABC Sports: "At some point you've got to ask yourself how much money you want to lose."

The sums being paid astonish investment analysts. Says Jay Nelson of Brown Brothers Harriman: "I just don't get it. They don't even seriously claim they'll be able to turn a real profit. I thought the goal of business was to make money." Responds NBC's senior vice president Betty Hudson: "We don't get into anything that wouldn't turn a profit." By all estimates, NBC's network operations earn the most pretax (chart). But cable, local stations, and Rupert Murdoch's **Fox** network continue to gain viewers—and the Big Three networks need to respond.

It's unlikely that CBS and NBC can get their money back by boosting ad rates. The current prices—$257,700 for a 30-second spot during last year's NCAA college basketball finals, for example—are about as much as advertisers will pay. Many TV sports contracts limit the number of ads per game.

Television programmers believe sports events draw a big audience that will stay tuned to whatever program follows. When Neal H. Pilson, president of CBS Sports, announced the baseball contracts, he described the deal as a "building block" that would help the third-ranked network become No. 1. After announcing the college basketball contract, he said, "CBS is following a big-event strategy. We think it is a good gamble, considering the popularity of the tournament over the last ten years. Sure there's a risk, but the future of the tournament looks very strong."

Even so, CBS remains the most troubled network. The question now: What will CEO Laurence Tisch do with the company's cash hoard of $2.8 billion? **– J. B. Blank**

WHO'S GOT TRASH-TO-ENERGY PLANTS

Company	In Operation	Under Construction or Contract
Ogden Projects	13	14
Wheelabrator Technologies	10	4
Foster Wheeler	3	6
Combustion Engineering	3	2
Westinghouse Electric	2	6
American Ref-Fuel	1	2

Environmentalists would like to keep these numbers from growing.

GARBAGE DISPOSAL: THE ONGOING WAR

■ The business of burning trash to create electricity still emits more than a few hot sparks. A new foreign player has taken over one of the six major U.S. firms in the business. Meanwhile, the Environmental Protection Agency threatens to put more restrictions on all refuse-to-energy plants. And Nimbys—the "not in my backyard" citizens who are fearful of toxic emissions from such plants—are winning legal battles to prevent their construction and use.

Ogden Projects, a subsidiary of **Ogden**, a conglomerate, and **Wheelabrator Technologies**, recently spun off by **Henley**, another conglomerate, lead the industry (table). Now a third conglomerate, Swedish-Swiss **Asea Brown Boveri**, has paid $1.6 billion for **Combustion Engineering**, a company plagued by technical problems. ABB will give it the financial support it needs to compete.

The EPA wants to ban any burning unless the municipalities that use incinerators recycle 25% of their garbage. The refuse-to-energy industry argues that all trash—including the stuff headed for landfills—should be subject to the same rule. Americans generate 160 million tons of garbage annually; 80% still ends up in fills.

Many citizens are convinced that these incinerators spill harmful dioxins or contaminate water supplies. They have persuaded local authorities in Los Angeles and Philadelphia, among other places, to scrap planned projects.

Operators of waste-to-energy plants are happy to separate recyclable material as long as they can sell it. Most already sort out ferrous metals, selling them as scrap. But doing this with other materials is not always a guaranteed sale because there are no reliable markets. As a result, many materials, like all-too-familiar curbside bundles of newspapers, are likely to remain just garbage.

– Susan E. Kuhn

TOP TRAVEL SPOTS FOR THE 1990s

■ Ah, the winter vacation. Time to pack and head to—Australia? You bet, says **American Express**, which surveyed 450 of its travel agents to find

The Great Barrier Reef in Australia: where Americans want to go

MCLAUGHLIN—THE STOCK MARKET

RETAILING'S WINNERS & LOSERS

War at the store will decimate merchants in the 1990s. Survivors will be narrowly focused, technologically advanced, and lightning quick to spot the trends. ■ *by Bill Saporito*

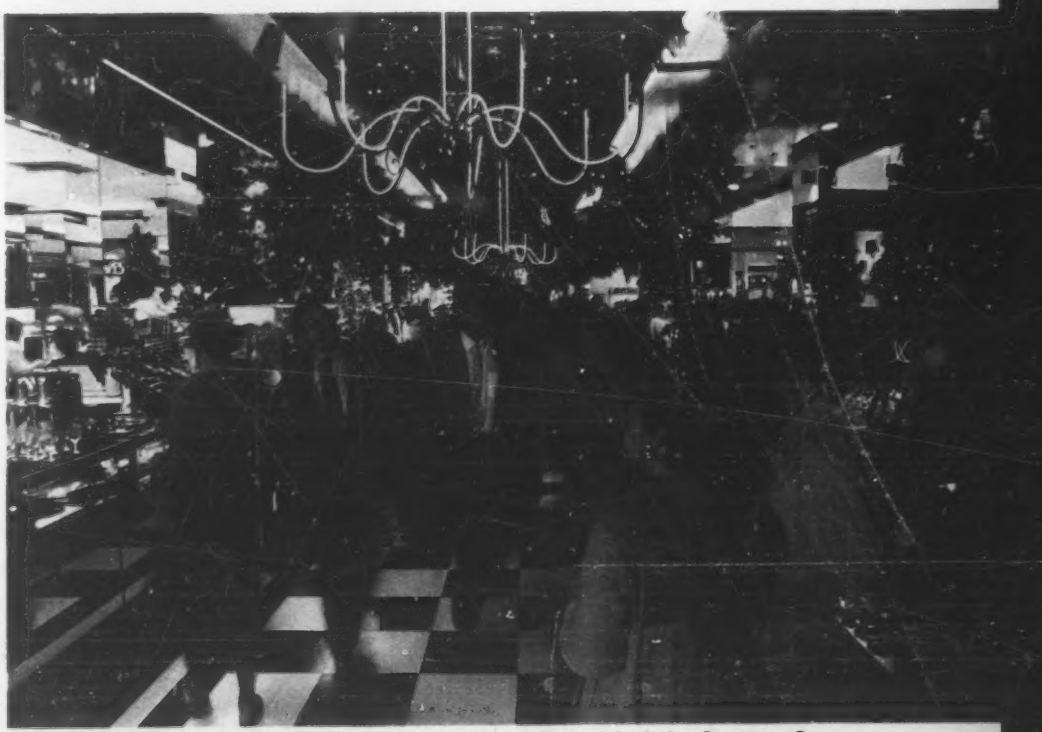
IN OCTOBER, David Glass, conductor of retailing's hallelujah choir, Wal-Mart Stores Inc. of Bentonville, Arkansas, treated a lunchtime gathering of merchants to some sour notes. He predicted that were he to address the same group in 1999, only 50% of the companies would be around for coffee. Though the genteel New York *Times* headlined Glass's speech RETAIL SHIFT IN U.S. SEEN, the content deserved tabloid treatment—CHAIN STORE MASSACRE.

Since then B. Altman, the venerable chain run into the ground by the blunderers from Down Under, Hooker Corp., announced its liquidation sale. An additional 170 stores are on the clearance table, victims of too much leverage, too many stores, too much game-playing with prices, and the same kind of merger and acquisition engineering that plagues other industries. Even Bloomingdale's, the flagship of Federated Department Stores and for years the industry trendsetter, is up for sale, as new owner Campeau Corp. struggles to meet the payments on its $10 billion debt.

Merchants are worried that Bloomies and other troubled retailers will kill the Christmas selling season for everybody by taking early markdowns to generate desperately needed cash, a charge Bloomingdale's CEO Marvin Traub heatedly denies. Nevertheless, a markdown psychology may take over. Says Frank Pasquerilla, chairman of Crown American, owner of Hess's Department Stores: "It's already happening." Even if Christmas 1989 isn't a calamity, the decade following surely will be.

The goal in retailing never changes—the right stuff in the right place at the right price. But the dynamics of the industry are such that the better companies are pulling away from the pack at an accelerating rate. The speed will kill, because real retail sales growth will be only 2.5% or less in the 1990s, vs. 4% or more from the mid-1970s through the 1980s, according to the accounting firm of Ernst & Young. When store growth outstrips market growth—and it has—somebody must close his doors.

REPORTER ASSOCIATE *Reed Abelson*



ANDY FREEBERG

Federated's crown jewel, Bloomingdale's, is on sale to bail out debt-laden Campeau Corp.

Armed with better technology to keep track of sales and react to consumer wants, and a clear identity in shoppers' minds, companies such as Dillard Department Stores, the Limited, R.H. Macy, Nordstrom, J.C. Penney, and Wal-Mart are beginning to exert enormous pressure on their competitors. By the turn of the century, says Thomas Rauh, director of retail consulting for Ernst & Young, each retail category will have no more than half a dozen, and perhaps as few as two merchants accounting for as much as 60% of retail sales, more than twice as much as they do now.

Industry experts say the nation's two biggest shopkeepers, Sears and K mart, which between them produced $1.6 billion in retail pretax profits last year, are likely to lose out in such a future. Each company is trying to stir up a sedentary organization, but their competitors are recasting just as quickly. Sears must cope with a resurgent J.C. Penney, while K mart is planted directly in the Northeastern expansion path of the other Mart from Bentonville.

To survive in the 1990s and into the next century, retailers will have to master a new set of requirements. Among them:

CLAUDIO EDINGER—GAMMA/LIAISON

RUSSELL MONK

The ghosts of Christmas future and past: Wexner (above), a merchant as hip as the Limited specialty stores, and Robert Campeau, strapped with $10 billion in debt.

■ **TECHNOLOGY.** The computer age, odd as it sounds, is about to rip retailing apart. J.C. Penney, for instance, can spot a great garment in Italy and fly the piece to Dallas, where it is recreated on the computer. While a video image is being shown to a focus group, the specs are being transmitted to a manufacturer in the Orient. If the focus group likes the garment, Penney can have it in its stores in weeks rather than months. That speed gives Penney—yes, Penney—a competitive edge in offering fashionable merchandise. Those companies like Wal-Mart that can master distribution technology—that is, the ability to replenish inventories so that a store is never out of stock—will have lower costs and so be able to cut prices and put pressure on already price-sensitive discount stores.

"When our customer goes into a store, she wants to see something new and she wants to see it now."

■ **IDENTITY.** The mass market is dead. Retailing consultant Carol Farmer and others believe the industry is polarizing, with commodity goods sold in megastores at rock-bottom prices at one end and specialty items with realistic but not necessarily low prices at the other, and nothing profitable in between. Says Farmer: "The Nineties will be the age of positioning."

Specialty stores in particular will have to pay attention to shifting demographics and lifestyle trends. The Limited, for instance, forced its Express stores to grow up as its prime customers matured. Once a playground for post-adolescent girls, Express now caters to contemporary women with sophisticated clothing presented in rich-looking, black-and-cream-colored marble stores. The company's annual report features these words in bold type from Chairman Leslie Wexner: The key is OUR ABILITY TO CHANGE.

■ **MARKETING.** One size, or store, does not fit all. Though national chains offer consumers consistency, the action is increasingly local. Recently two shoppers in a Gap store in a Boynton Beach, Florida, mall asked the clerk for shorts. "We don't have any," came the reply. Nor were any expected. Indeed, the same arrangement of dark, heavy-looking garments covered the walls in tropical Florida that one would likely find in frozen Minneapolis.

Retailers who use the information their computers give them about consumer buying patterns will win. In the same Florida mall, Macy's had carefully tailored its inventory to local, middle-class shoppers: No dresses the price of a small Toyota. Those were available down the road in Macy's West Palm Beach store.

■ **SERVICE.** Ah, yes, in case you hadn't noticed, the industry's most intractable problem. As consumers get older—and they will get older in the 1990s, with the 44- to 55-year-old gang growing as fast as their waistlines—they appreciate more service. Unfortunately, the pool of 18- to 34-year-olds who are supposed to provide the service is shrinking.

Service doesn't necessarily mean having a person actually wait on you. But it does mean that whether the store is self-service or has hot-and-cold-running clerks, the inventory is plentiful, the merchandise is well presented, and the necessary information is clearly displayed.

WILL PEOPLE STILL SHOP in stores? Absolutely. But consumers are changing their buying patterns, and this has meant bad news for department stores. The Limited's Wexner notes that women used to snake dance through the malls, starting at a department store and then stopping at each and every boutique. Women don't have that kind of time anymore: They go to the mall with a store and purpose in mind—the discounter for staples and the specialty store for clothing.

In the last half of the 1980s, discount stores actually overtook department stores in unit sales of apparel. Meanwhile specialty stores, with a narrow range of merchandise carefully chosen for the needs of executives and other people with more money than time, creamed off the upper end of the department store market. The big outlets also lost their credibility with shoppers on price. According to industry consultant Walter K. Levy, 65% of consumers now wait for sales, up from 50% in 1984. The demographics of aging may rescue some department stores, but only those that really do offer higher-quality goods and better service. Among the survi-

vors: Dillard, R.H. Macy, and Nordstrom.

For the past two years emporiums such as Macy's and Bloomingdale's have been converting their sales staffs to commission selling, a practice epitomized by Nordstrom, the Seattle chain whose reputation for service is unparalleled. With commissions of about 7% of the sale and a culture that worships the customer, the company has created a professional cadre of motivated salespeople known for their ability to sell more than one item to a customer in a single transaction. Nordstrom is spreading that religion east with stores in Virginia and others planned for several mid-Atlantic states.

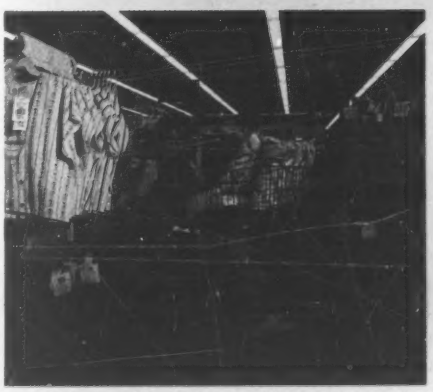
MANUFACTURERS, not satisfied with the pace of change and worried about how their products are sold, are stepping in to help train department store workers (see box). For instance, Hartmarx, a manufacturer of expensive men's suits under Hickey-Freeman, Hart Schaffner & Marx, and other labels, soon will officially open Hart Schaffner & Marx U, as in university. The company will be accepting students from department and specialty stores to teach them how to proffer the customer a high-quality suit. If a guy is going to lay out $500 for fancy threads, then someone had better be around who knows something about the material, says Hartmarx CEO Harvey Weinberg. "There's too much clerking and not enough selling. We are going to address that."

The department stores also plan to use inventory as a competitive weapon. Where once they were out of stock some 20% of the time, now no more than 5% is permissible. Companies such as R.H. Macy tackle the problem by picking their assortments carefully and then buying big quantities. Dillard takes the measured approach of highly computerized inventory control.

The low estate that some department stores have fallen into can be gauged by the intentions of the Limited. Twice in the past five years, the specialty merchant tried unsuccessfully to take over Carter Hawley Hale, the big California department store operator. Now Saks Fifth Avenue, Marshall Field's, and Bloomingdale's are all for sale, but the Limited has shown nary a sign of interest.

Instead, its goal is to dominate market niches in women's apparel, from large sizes via Lane Bryant, to lingerie with Victoria's Secret and a naughty new entry called Cacique, purveyor of French unmentionables. Wexner is raising the ante for his specialty

BRIAN SMITH (3)



Good signs, wide aisles, and low prices make shopping easy at Wal-Mart's spruce emporium in Sunrise, Florida. The store even provides wheelchairs for the handicapped.

competitors—Claire's Stores, Petrie Stores, and U.S. Shoe, which owns Casual Corner—telling them, in effect, to get big or get lost.

BEHIND THE GLAMOUR at the Limited is a fashion distribution machine designed to move apparel as if it were fruit. Says Wexner: "Our customer doesn't give a damn that we've been in business for 25 years. When she goes into a store, she wants to see something new and she wants to see it now." The Limited will place orders only with manufacturers that can deliver to the stores within 60 days—and on occasion 15—and Wexner wants to compress the cycle even further. More laid-back retailers are ordering now for next summer.

Among the discounters, most analysts are already ceding the No. 1 spot in total retail sales to Wal-Mart by the mid-1990s. This is bad news for K mart, whose chief executive, Joseph Antonini, vowed in October to "remain the price leader across America." But he can't unless he improves K mart's basic operations. In the K mart in Sunrise, Florida, recently, shoppers found hundreds of items out of stock because no one had replenished them. Aisles were clogged with empty boxes, and goods were haphazardly displayed. The mess was in glaring contrast to the Wal-Mart down the street, a 115,000-square-foot giant, one of the company's biggest stores, stuffed with low-priced goods, yet still easy to get around in.

Wal-Mart demonstrates that operating

ability is a competitive advantage. The company is growing at a rapid clip of some 35% a year, but each dollar of those sales is more powerful than one taken in by competitors. Consider: Wal-Mart generates 9% more sales per square foot than a typical store. That means the company turns its inventory faster than its rivals do and at lower cost, because the quicker the goods move, the less Wal-Mart has to borrow to carry them. This relationship is expressed as a ratio called gross margin return on inventory, and Wal-Mart's is 1.41, vs. the industry's 1.29. Because the company earns more on its inventory investment, its operating profit margin is bigger too—7%, compared with the industry's 6.3%.

Such ratios can make magic. With lower operating costs, Wal-Mart can charge less and earn more: The company's gross margin—gross profit divided by sales—of 23% is lower than its competition's. K mart's gross margin is 28%, for example. But Wal-Mart's net profit is 4% of sales, compared with the industry average of 2.9%, providing the funds to stoke its expansion fire. The beauty is that selling merchandise for less has a tendency to increase sales, making Wal-Mart even more efficient. The scary part, at least for competitors like K mart, is that Wal-Mart will likely reduce its prices further as it becomes ever more efficient. *continued*

HOW THE STORES STACK UP

RETAILER Headquarters	OPERATIONS	RETAIL SALES* (Millions)	PRETAX PROFITS (Millions)	INTEREST EXPENSES (Millions)	5-YEAR GROWTH RATE**	COMMENTS
MASS MERCHANTS						
Montgomery Ward Chicago	Montgomery Ward	$4,784	$182 [1]	$153 [1]	17.9% [1]	An LBO holding its own by becoming a specialty retailer.
Sears Roebuck Chicago	EyeMasters, Sears, Sears Business Systems Center, Tire America, Western Auto	$30,256	$333	$1,093	(25.39%)	A colossus in crisis. The switch to everyday low prices is not a success.
DEPARTMENT STORES						
Allied Stores [2] Cincinnati	Bon Marché, Maas Brothers, Jordan Marsh, Stern's	$2,974	($194) [3]	$251	N.A.	The stores are caught in the Campeau cash crunch.
BAT Industries London	Breuners, Ivey's, Marshall Field's, Saks Fifth Avenue	$2,643	$177	N.A.	N.A.	Stores are for sale as part of takeover defense.
Carter Hawley Hale Los Angeles	Broadway, Emporium, Thalhimers, Weinstocks	$2,787	$12 [4]	$160	N.A.	Another LBO overhaul. Still struggling to increase sales.
Dayton Hudson Minneapolis	Dayton Hudson, Mervyn's, Target	$12,204	$472	$231	1.0%	Well positioned in two niches: discount and department stores
Dillard Dep't Stores Little Rock, Ark.	Dillard's	$2,558	$173	$81	24.0%	This profitable traditionalist could pick up new stores cheaply.
Fed. Dep't Stores [2] Cincinnati	Abraham & Straus, Bloomingdale's, Burdines, Lazarus, Rich's	$4,542 [5]	($209) [5]	$651 [6]	N.A.	Campeau's cash cow is weak from the milking. An underperformer.
Hess Dep't Stores [7] Allentown, Pa.	Hess's	$614	$13	$17	N.A.	Developer-owner didn't bleed the stores. Looking to make a big purchase soon.
R.H. Macy & Co. New York City	Bullock's, Bullock's-Wilshire, I. Magnin, Macy's	$6,974	($47) [4]	$707	N.A.	The winner of the battle for Federated, which sold it Bullock's and I. Magnin.
May Dep't Stores St. Louis	Filene's, Foley's, Hecht's, Kaufmann's, Lord & Taylor, May Co., Robinson's	$11,525	$781	$254	18.0%	A middle-brow moderate that is dumping its discount store business.
Nordstrom Seattle	Nordstrom, Nordstrom Rack	$2,328	$198	$45	22.0%	For service it is without peer in the industry.
J.C. Penney Dallas	J.C. Penney, Thrift Drug	$14,833	$1,192	$351	8.7%	Woke up and smelled the coffee. Boldly moving into apparel.
DISCOUNTERS						
K mart Troy, Mich.	Builders Square, K mart, Pay Less Drug Stores, Waldenbooks	$27,301	$1,244	$346	7.8%	Still has a strong discount franchise but faces a tough slog against Wal-Mart.
Wal-Mart Stores Bentonville, Ark.	dot Deep Discount Drug, Hypermart USA, Sam's Wholesale Club, Wal-Mart	$20,649	$1,325	$136	30.0%	Merchandising machine doesn't show signs of running out of steam.
SPECIALTY STORES						
The Gap San Francisco	Banana Republic, GapKids, the Gap	$1,252	$126	$3	25.0%	Rebounding sharply after slipping on the banana.
The Limited Columbus, Ohio	Abercrombie & Fitch, Express, Lane Bryant, Lerner, Limited Stores, Victoria's Secret	$4,071	$396	$63	24.0%	Low debt, strong balance sheet, plus exciting store concepts.
Neiman Marcus [8] Chestnut Hill, Mass.	Bergdorf Goodman, Contempo Casuals, Neiman Marcus	$1,468	$44	N.A.	N.A.	Carter Hawley spinoff still has caché, particularly Bergdorf's.
Toys "R" Us Paramus, N.J.	Kids "R" Us, Toys "R" Us	$4,000	$429	$26	19.2%	Going global, including Japan. Toys "R" "U.S." to the Europeans.
F.W. Woolworth New York City	Foot Locker, Kinney Shoes, Kids Mart, Mathers, Richman, Woolworth's	$7,229	$444	$71	16.5%	The specialty store strategy is paying off.

* Sales are for retail operations only for the latest fiscal year, except where noted.
** Compound annual growth rate for pretax profits.
[1] Figures include businesses other than retail.
[2] Owned by Campeau.
[3] Not including asset sale.
[4] Before extraordinary items.
[5] Pro forma estimates.
[6] For nine months ended 1/31/89.
[7] Owned by Crown American.
[8] Owned by General Cinema.

JAY BROUSSEAU

No more the polyester paradise—the spiffy sales floor of a J.C. Penney in Addison, Texas.

The mass merchants like Sears will not survive into the next century in their traditional configurations. The newly vibrant J.C. Penney, once a general-merchandise also-ran, is going to be a winner in the 1990s because it has successfully repositioned itself as a department store. Says CEO William R. Howell: "If you begin to lose a franchise and you don't change, it's only a matter of time before you are without a purpose." And without shoppers.

Penney's new self dates back to the late Seventies, when an internal task force began to reevaluate the company. Penney's research told executives that consumers perceived the company as a kind of national department store that they could trust except for big apparel purchases. But why be thought of as a department store where customers went only for low-priced basics?

So beginning in 1983 Penney made two bold moves: First the company eliminated major appliances, hardware, and about $1 billion in sales. Last year it ditched home electronics, sports hardware, photography, and another $500 million in revenues. Meanwhile, Penney has almost doubled its women's apparel section to 49,000 square feet a store, and more than doubled its men's department. Once a polyester paradise, the company now sells $370 Harvé Bernard suits for executive women and similarly priced Daks suits for men.

Howell believes he can take Penney even further up the apparel pecking order if only he could get tony outfitters such as Ralph Lauren or Liz Claiborne to come aboard. (Penney *is* persistent. Levi Strauss cut off James Cash Penney in 1911 for discounting. Howell got the jeans back, 70 years later.)

Not only is Penney redoing its stores, but it is also revolutionizing its buying. More than half the company's merchandise comes from suppliers wired for electronic data interchange, a system that automatically replenishes merchandise. Howell says the number will reach 80% in the near future, and that by 1991 both vendors and sales clerks will have access to the same up-to-the-second information to better plan inventories and sales promotions.

SEARS ROEBUCK is also trying to bring off the repositioning trick. But its turnaround is contingent on convincing consumers that it really does have everyday low prices, and on paring the highest cost structure of any major retailer to levels the company has never before achieved. The five-year-old "store of the future" is being updated already. The new look is to put all merchandise into "power" departments, including appliances, electronics, children's wear, automotive supplies, and men's casual clothing. The "power" comes from the large size of the departments and the scope of the merchandise: more brands and more selections.

Says CEO Edward Brennan: "We are managing major changes in all aspects of the business." But the overhauled company is playing to less than favorable reviews. Says Carol Farmer: "The big question to ask about Sears is not *if* but *when*, and what sort of tidal wave will it create as it goes under."

Retailing is really about the communication of ideas and trends, but the cycle that runs from hot to old hat seems to get shorter each time. The Eighties brought the blossoming of warehouse clubs like Price Co., "category killers" like Toys "R" Us and Circuit City, and, of course, such catalogue merchants as L.L. Bean and Lands' End. Certainly the next decade will give birth to new, breakaway formats that will obliterate competitors in no time. Sad as it is to see fine old names go out of business, many will. And shoppers will be served better for it. ■

By the book: Hartmarx, the suitmaker, now will train department store help.

DAVID WALBERG

HANS WILDORF

These workers in Poland want to build a car for you. Fiat is talking about exporting a new model from this joint venture plant near Warsaw.

WHO GAINS FROM THE NEW EUROPE

Almost everybody does—and there's opportunity aplenty for deals. The combined GNP of East Germany, Hungary, and Czechoslovakia is bigger than China's. ■ *by Richard I. Kirkland Jr.*

WITH THE FALL of the Wall and the lifting of the Curtain, Western managers and investors must rethink their strategies for doing business in Europe in the 1990s. Suddenly the Old World has gained a new frontier. East of the Elbe, Communist parties are on the run. A year from now, or even sooner, most will probably be sharing power—and some may even be out. Freer politics inevitably will create freer markets.

The possibilities are huge. Among the 12 members of the European Community, the campaign to forge a true common market by the end of 1992 was already boosting growth rates and capital spending. Now, says Percy Barnevik, the lanky Swede who heads Switzerland-based Asea Brown Boveri (ABB), the world's largest heavy-engineering company, "the opening of Eastern Europe could prove even more important than the drive for a single market."

The combined GNP of East Germany, Hungary, and Czechoslovakia is larger than that of China. The three countries also have relatively well-trained and reliable workers who toil for less than a quarter of what their Western brethren are paid. Give them access to their developed neighbors' markets and hefty injections of Western capital, predicts Robert Hormats, vice chairman of Goldman Sachs International, and "they could become the tigers of Europe." Morgan Stanley chief equity strategist Barton Biggs believes that over the next five years East Germany could prove "the fastest-growing economy in the world." He advises buying West German and possibly Austri-

REPORTER ASSOCIATE *Mark M. Colodny*

ROBERT WALLIS—SIPA

Visitors from the East ogle a Mercedes-Benz on display in a tony showroom on the Kurfürstendamm, West Berlin's Fifth Avenue. One of these days . . .

an stocks as the best way to play this emerging market.

Who wins and who loses if the East's backward economies finally integrate into the global economy and take off? The right answer is everybody wins and nobody loses—except, of course, the political leaders who are toppling. Western Europe will find the gains especially sweet. At $43 billion last year, its exports to the Russians and their satellites were ten times larger than America's and more than 11 times larger than Japan's. West German companies will be the biggest winners, followed by the Austrians, Italians, French, and Finns.

American companies will benefit because they will be able to increase sales to a Western Europe made even more dynamic by its expanding Eastern frontier. Deutsche Bank chief economist Norbert Walter estimates that the 600,000 ethnic Germans and East Germans who have emigrated from Eastern Europe this year will add a full percentage point to West German consumer spending in 1990. Since West German factories are humming at full capacity, only a surge in imports will satisfy that demand. And in the slightly longer run, if peace really does break out between the superpowers, no Western economy—or stock market—ultimately stands to gain more from falling defense spending than America's.

Farsighted executives had their eyes on these opportunities well before the Berlin Wall blew open on November 9. In September, General Electric of the U.S. began negotiating with Hungary's reform-minded government to buy Tungsram, a state-owned lighting manufacturer with sizable exports to the West. By mid-November, GE Chairman Jack Welch had a deal. For $150 million GE bought just over 50% of Tungsram—plus an option to purchase 20% more if the company's exports can double. Says Welch: "We recognize that we are swimming in uncharted waters. But acquiring Tungsram gives us an entry into a part of the world that has been held primarily by Siemens and Philips. By positioning us for a Europe in which, down the road, East and West will blur, it helps us toward our strategic goal of being No. 1 in our global markets."

OTHER COMPANIES with long experience in the East are either expanding there or contemplating doing so. Fiat has licensed technology to Polish carmakers since 1921. In 1991, Poland's state-owned FSM will start exporting more than 50,000 subcompact Fiat Mickros to the West—the first time a completely new Fiat car has been built outside Italy. Fiat is also talking with FSO, another Polish automaker, and is on the verge of striking a giant joint venture deal with the Soviet Union.

MAP BY TONY MELACRINO

	POPULATION	GROSS NATIONAL PRODUCT			FORTUNE RATINGS		
	In millions	Total in billions	Per capita	Eight-year average annual growth rate	Economic potential	Receptivity to foreign investment	Speed of reform
MOST PROMISING							
East Germany	16.6	$155.28	$9,360	1.8%	A	C–	C
Czechoslovakia	15.6	$118.56	$7,600	1.3%	B+	B	C–
Hungary	10.6	$66.90	$6,300	1.0%	B	A	A
PROMISING							
Poland	38.0	$210.52	$5,540	0.7%	C+	A	A
LEAST PROMISING							
Bulgaria	9.0	$50.67	$5,630	1.2%	C	B	C+
Yugoslavia	23.6	$115.64	$4,900	1.2%	C	B–	B–
Rumania	23.0	$94.76	$4,120	0.0%	D+	C–	F
Albania	3.1	N.A.	N.A.	N.A.	D–	F	F

SOURCES: FRANKFURT, CIA ESTIMATES

ROBERT WALLIS—SPA

Bringing home booty from the West.

ABB is negotiating with two Polish turbine makers, Domel and Camech, to form joint ventures to sell components in both Eastern and Western Europe. Eastman Kodak two years ago set up a joint venture in Hungary that sells $5 million of film, cameras, and photo processing a year. David Harari, Kodak's manager for Eastern Europe, says he is discussing a deal with Poland "six to seven times larger."

Political leaders on both sides have barely begun to grapple with the challenges of melding Europe's postwar halves. How much aid should the Western allies offer the East, under what conditions, and in what form? What if demonstrators filling the streets of Leipzig or Prague, having won first an inch and then a yard, suddenly demand unlimited mileage—a complete break with the Warsaw Pact? How would Mikhail Gorbachev respond? Will reunification, or at least economic reintegration, of the two Germanys derail Europe's Project 1992 or merely slow it? And how and when should the U.S. and the Soviet Union bring troops home from Central Europe?

The uncertain outlook for Russia's perestroika—and thus Mikhail Gorbachev's survival—guarantees that Western investors in the East will have to live with higher than average political risk for at least the next decade. But political risk isn't the worry it used to be. The Communist bloc is so desperate for Western technology and capital that even if hard-liners regain control, they're unlikely to expropriate foreigners' factories or profits. That certainly did not happen in China after last June's Tiananmen Square massacre.

THE BIGGER RISKS are economic. If your host government is going to let inflation explode, fail to deliver vital supplies, and waste foreign loans on consumer subsidies, you might be wiser to reject his invitation. Hungary and Poland, which are the most eager to attract Western investment, are also among the East's biggest debtors. Forecasters at WEFA Group near Philadelphia estimate that the two countries' ratios of net debt to hard currency exports are 237% and 500%, respectively.

Partly because of their troubles—and because they have made the greatest strides toward democracy—the Poles and Hungarians are furthest ahead in introducing pro-market reforms. But will they go far enough? Given the gap between Eastern Europe's vast potential and its present woes, investors may feel confused. Here are tips from old hands in the region.

■ **Place affordable bets.** Says Dwayne O. Andreas, chairman of Archer Daniels Midland and an ardent advocate of more East-West trade: "It's like anything else. You don't risk the farm. You risk three acres." GE's $150 million purchase of Tungsram is the largest Western investment in Hungary since World War II. But that investment is less than 10% of what the company may spend buying back its own stock next year, and even smaller potatoes compared with GE's total capital spending budget.

■ **Do your homework carefully.** Four of the eight Eastern European countries don't even appear on most Western shopping lists (see table). Under longtime leader Nicolae Ceausescu, Rumania's once promising economy is on a quick march back to the 15th century—a century tiny Albania never left. Ethnic animosity and hyperinflation could tear Yugoslavia apart well before the next millennium. Bulgaria is at least trying harder, but it's a long way from Sophia to Vienna.

At the moment Hungary gives Western investors the most options. Some 850 foreign joint ventures with outside capital of roughly $1 billion will operate there by year's end. Many have begun in just the past 12 months. In addition, Hungary's ambitious new privatization program may well expand if, as expected, an even more pro-market coalition government comes to power in next spring's elections. Meanwhile, auditors from Price Waterhouse, Ernst & Young, and other major accounting firms are busily checking the books of Hungarian companies that plan to list on the East bloc's first stock market, scheduled to open in Budapest next year.

Though Poland shares Hungary's eagerness to attract Western capital, its economy—and its accounting practices—are both in much worse shape. Says economist Warren Oliver of the London brokerage firm UBS Phillips & Drew: "It's simply impossible to know what you're buying in Poland. I'd challenge GE's acquisitions department to make sense of the books kept by a Polish state industry."

OUTLOOK	
If it presses ahead with reforms, and gets massive West German aid and investment, could grow rapidly.	
The economy is relatively strong. Now that the hard-liners are out, his sleeper could awaken.	
Gives a warm welcome to Western investment. But big debts and low productivity will hamper growth.	
Inflation is soaring, debts are staggering, but Solidarity's proposed reforms are radical. Take a hard look.	
New leaders praise free elections, permit demonstrations, and promise reform. Could make modest progress.	
The economy is in desperate shape and ethnic strife is rising; the country could split apart in coming years.	
One of the last really nasty family dictatorships is destroying a once promising economy. Pray for a *Putsch*.	
Xenophobic, dirt poor, and constitutionally forbidden to borrow abroad. May be worth a look next century.	

JOE MCNALLY

GE Chairman Welch

What Poland's Solidarity-led government does offer is a breathtakingly radical plan to cut subsidies, free prices, and move quickly to a convertible currency. Says Deutsche Bank's Walter: "No Communist country has ever adopted a more conceptually convincing program for moving to a market-oriented economy. We must all look more carefully at what could happen in Poland." Because their break with the past is so sharp, the Poles can also expect big injections of Western aid. The U.S. Congress just approved an $852 million package, while West German Chancellor Helmut Kohl has promised at least $1.5 billion.

East Germany is almost everyone's favorite turnaround candidate. Though its economy has been hammered by the migration of many of its best young workers, that damage can be repaired quickly—if the Communists move to adopt fundamental reforms, including free elections. Should that happen, Jan Vanous, research director of PlanEcon, a Washington, D.C., consulting firm, believes the annual flow of private and public money from West Germany *alone* could "easily" top $10 billion and continue for at least a decade. Says he: "No other East European country can dream of this type of windfall from making the right political and economic moves. It would take real talent *not* to pull the East German economy above the average standard of living in the Common Market by the year 2000."

NORBERT NOE—CONTRAST/GAMMA LIAISON

GE bought 50% of this Hungarian light bulb plant.

■ **Don't leap into Eastern Europe without a hard-currency safety net.** You'll need some way to get your cash out. A system of fully convertible currencies won't emerge for several more years, possibly longer. If your main interest is serving the domestic market, creative bartering is still the only way to change your zlotys or forints into real money. For example, PepsiCo exports chairs from timber-rich Poland to its Pizza Hut franchisees in the U.S. in order to get profits out of its Polish bottling operations.

■ **Don't expect a quick payoff.** Says Juergen Aumueller, president of American Express Travel Services in Europe: "Patience is the key." Despite the current euphoria, no Eastern European country is moving from Stalinism to Thatcherism overnight. Outmoded plants and unpredictable supply lines will continue to make planning an art, not a science. Richard Norton, PepsiCo's vice president for Eastern Europe, figures lack of spare parts alone forces plants there to endure 20% more downtime than their U.S. counterparts.

Corruption will remain endemic, contacts essential. Unless you've got the in-house expertise to negotiate this morass, William Cornelius, director of trade policy for Dow Chemical, suggests it may be wise not to take a majority stake in an Eastern bloc joint venture. Says he: "Without at least 50% of the deal, your partner may not direct enough of his energies toward solving your company's problems."

■ **Above all, don't delay.** Start exploring the possibilities in Eastern Europe. The number of companies capable of competing successfully on world markets, as do Tungsram or Ikarus, a Hungarian busmaker, is larger than you might think—but it's still limited. Demand for these islands of efficiency is sure to rise. Smart investors, such as America's George Soros and Italy's Carlo de Benedetti, are already seeking out opportunities.

Japanese interest is also growing. Daihatsu, Japan's No. 8 automobile company, is talking with Poland's FSO about a joint venture that would produce 120,000 small cars a year, some for export to the Soviet Union and the West. Says Stewart White, a partner in the London law firm of Denton Hall Burgin & Warrens: "In our new Tokyo office the first question potential Japanese clients ask these days is whether we have expertise in East-West trade."

Early birds will also grab the best local managers. Peter Hargitay, owner of a private holding company in Zurich that specializes in communications, finance, and public relations, expanded into Hungary more than a year ago, just as the latest round of reforms were launched. By doing so, he was able to recruit Janos Fekete, the former head of Hungary's National Bank, as chairman of his subsidiary. Fekete also heads the commission advising Hungary's Parliament on future economic reforms.

As the world enters a new decade, a new Europe is emerging as well. What's in doubt isn't the trend but the timing. The day after the Berlin Wall split apart, David Roche, Morgan Stanley's top European equity strategist, advised his clients to immediately boost their stake in German stocks, despite the likelihood that an overheating economy could temporarily drive up interest rates. Explains Roche: "I'm trying to tell people where they're going to make money over the next five to ten years. Just as markets in the 1980s were defined by Reaganomics and Thatcherism, the 1990s will be defined by the shifting of the ideological plates that have separated the world's geopolitical land masses." Despite the difficulties that lie ahead, companies that aim to remain globally competitive shouldn't wait too long to invest either time or money in those changes. ■

BEHIND THE BATTLE OVER CHOLESTEROL

Some people with lots of the stuff live to be 90; others with far less die young. Here's why well-intentioned experts are disagreeing so noisily over what to do about it. ■ *by Stuart Gannes*

WOULDN'T IT BE NICE if all medical advice about life-and-death matters like heart disease were based on clear, unambiguous scientific evidence? But it's not. That disagreeable fact has left millions of people frustrated, especially given the new debate over what—if anything—they should do about reducing cholesterol, the waxy substance that builds up in the arteries and often causes heart attacks.

Must everyone worry about how much of the stuff is circulating in his blood? Or can some disregard it because of age, sex, or genes? Do diet and exercise always affect cholesterol? Who should take cholesterol-lowering drugs, especially the potent new ones that may have unknown side effects? Does cutting cholesterol really mean a person will live longer?

The answer to all those questions is a resounding maybe. That uncertainty is calamitous, because coronary disease is the No. 1 killer in the U.S. Of the 1.25 million Americans who have heart attacks each year, 300,000 never make it to a hospital alive and another 200,000 die within a month. Five million people suffer from angina pectoris, the recurring pain caused by partial blockage of coronary arteries.

The debate is important for economic reasons as well. Cholesterol is big business. Already more than 151 million Americans have had their cholesterol levels tested, at an average cost of $10. Sales of anticholesterol drugs are sizzling (see chart); the annual market will top $3.1 billion within five years, says analyst Neil Sweig, who follows the pharmaceuticals industry for Prudential-Bache. Leading products include Merck's Mevacor, Bristol-Myers Squibb's Questran, and Warner-Lambert's Lopid. With billions at stake, food companies from Kellogg to ConAgra are betting on the cholesterol-fighting properties of a gamut of goodies from psyllium husks in breakfast cereal to low-fat frozen enchiladas. Starting in February, the American Heart Association will stick a red-and-white "heart and check" seal of approval on food products that meet its fat and cholesterol guidelines.

No one disputes that high cholesterol counts correlate statistically with greater incidence of heart disease. Medical authorities agree that elevated blood cholesterol levels are potentially hazardous and that lowering them reduces the actuarial danger of heart disease, though not necessarily the real danger to a single individual. Although the odds favor cutting cholesterol, some people with high cholesterol counts live to a healthy 90, while others with far lower levels die prematurely of heart attacks. Says Daniel Steinberg, a professor of medicine at the University of California at San Diego: "We are not arguing about high choles-

JOHN W. MCDONOUGH

HIGH BLOOD CHOLESTEROL IS UNQUESTIONABLY A RISK FACTOR. IS IT HIGHLY PROBABLE THAT MANY PEOPLE COULD REDUCE THE RISK OF HAVING A HEART ATTACK BY LOWERING THEIR CHOLESTEROL LEVELS? THE ANSWER IS YES INDEED.

—DANIEL STEINBERG
Professor of Medicine
University of California at San Diego

YOU CAN'T PROVE THAT LOWER CHOLESTEROL LEVELS MEAN ANYTHING. THEY CERTAINLY DON'T IMPROVE MORTALITY RATES. HOW CAN YOU SAY THAT CHANGING THE DIET OF THE WHOLE COUNTRY WILL MEAN ANYTHING?

—ELIOT CORDAY
Professor of Clinical Medicine
University of California at Los Angeles

DAVID STOCK-DAVE

terol causing increased risk. The controversy is over how much effort should be put into lowering cholesterol levels."

Does it make sense to try to alter the way millions of Americans live in order to reduce the risk of heart attacks?

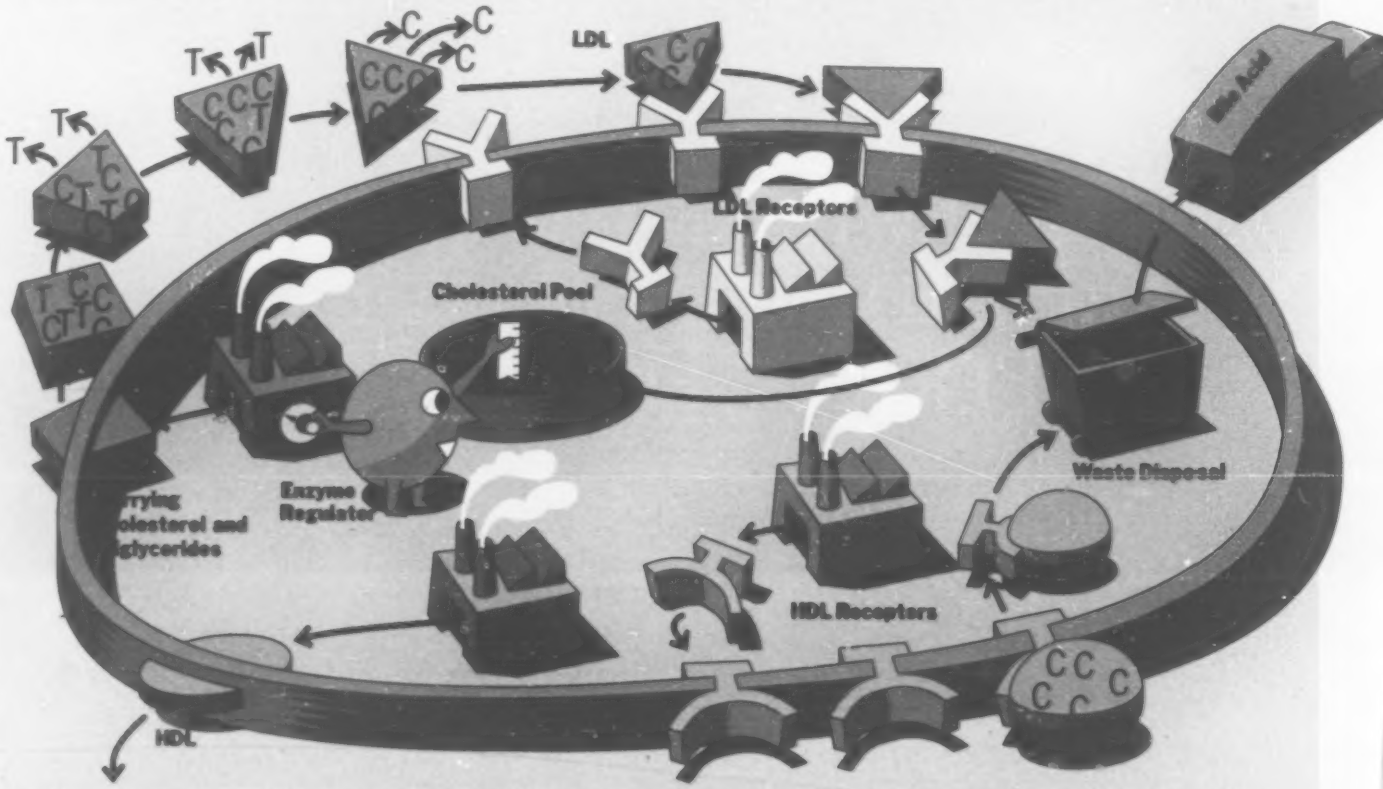
Yes, argues the federal government, which has thrown its weight behind the National Cholesterol Education Program (NCEP), which recommends that everyone over age 20 have his blood tested at least once every five years at his own expense and urges the 98 million Americans with counts above 200 milligrams per deciliter of blood to lower them with diet or drugs.

No, insists a diverse group of skeptics, who contend that a huge effort to cut cholesterol levels would not only waste vast amounts of time and money, but also unintentionally damage many people's health. Each side accuses the other of oversimplifying an exceedingly complex public health problem. Observes famed Houston heart surgeon Michael DeBakey: "Twenty-seven percent of the people I operate on for a coronary bypass have normal cholesterol levels. Their blood is as pure as the driven

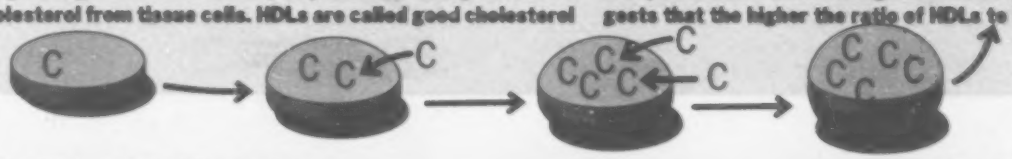
A CONSUMER'S GUIDE TO YOUR LOCAL CHOLESTEROL FACTORY

Some lucky people can eat all the deviled eggs they want without worrying about cholesterol. Others must keep to a strict diet in order to hold their cholesterol in check. Why? The liver—the body's cholesterol factory—regulates cholesterol in the blood by reducing its output whenever high-fat food comes its way. But for reasons not completely understood, in some people the liver fails to sense dietary fluctuations and continues to produce cholesterol at the usual rate. When that happens, blood cholesterol can rise to dangerously high levels, increasing the risk of heart disease.

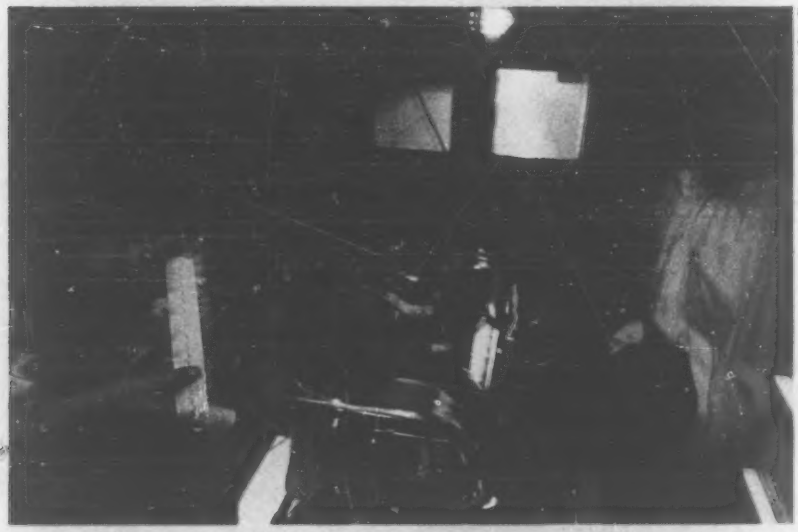
A liver cell produces cholesterol and loads it onto very-low-density lipoproteins (VLDLs) along with triglycerides, fats the body uses for energy (T in the diagram). In the bloodstream, VLDLs deliver triglycerides to tissues that need them. Gradually the VLDLs turn into low-density lipoproteins (LDLs), which distribute cholesterol, shown as C, throughout the body. Excess LDLs return to the liver, where an enzyme-controlled system recycles the remaining cholesterol or eliminates it as bile.



A liver cell also releases high-density lipoproteins (HDLs). Traveling through the blood stream, they have the ability to remove cholesterol from tissue cells. HDLs are called good cholesterol because they carry excess cholesterol back to the liver, where receptors admit them through cell membranes. Research suggests that the higher the ratio of HDLs to LDLs, the better.



THE SAFEST CITY FOR A HEART ATTACK



Seattle's emergency medical crews reach victims in an average of six minutes.

The single most critical factor in saving the life of a heart attack victim is how quickly blood resumes flowing through the coronary artery. The longer the heart goes without blood, the greater the damage. So your chance of surviving a heart attack is highest in places that have well-organized, well-equipped emergency medical services (EMS). According to Odelia Braun, medical director of the California Center for Pre-Hospital Research and Training, the best have 911 telephone links, ambulances and fire engines with defibrillation paddles for restoring heartbeats, and paramedics who accompany the ambulance and administer intravenous drugs if necessary.

What's the best U.S. city to have a heart attack in? Virtually every medical authority agrees that Seattle is No. 1. Says Braun: "Seattle pioneered in quick-response defibrillation and community classes in cardiopulmonary resuscitation. It has a sophisticated system, where the highest-trained personnel go out on the most critical calls. Paramedics send EKGs ahead by phone to physicians at the hospital, and administer appropriate clot-dissolving drugs while the patient is still in the ambulance."

Braun also gives top marks for emergency medical services to Austin, Texas; Columbus, Ohio; Eugene, Oregon; Houston; Milwaukee; Pittsburgh; Phoenix; and Salt Lake City. Urbanites aren't the only lucky ones. Braun considers EMS outstanding in most of rural Iowa and some parts of Kansas.

snow—but their arteries are clogged."

How can intelligent, presumably disinterested specialists disagree so diametrically? More than either side cares to admit, the squabble turns on the interpretation of statistics—the distinction between relative risk and absolute risk, for example. One much pondered study found that a particular drug treatment reduced the chance of having a heart attack by 12.5%, seemingly a substantial number. But the *overall* risk for those who went untreated was only 8%, vs. 7% for those who took medication.

Perhaps because some researchers consider the problem so pervasive and urgent, the data seem to them conclusive enough to merit pressing on with a sweeping, expensive national program. Though critics cite clinical studies showing that it's hard to lower cholesterol more than 10%, on average, by diet alone, proponents of cholesterol screening and treatment maintain that the whole population will benefit if cholesterol levels come down even 10% or less. What's more, they say, cholesterol testing will identify those who can gain the most from a reduction program.

Others look at the same numbers from a different perspective and reach a Scotch verdict: not proved. They contend that trying to change the cholesterol levels of large numbers of people cannot be justified on the basis of either efficacy or cost. Many medical researchers believe that reductions of 10% or less will produce only infinitesimal changes in overall mortality rates from heart disease. Drugs can lower cholesterol counts more than 10% for large numbers of people. But how many of those will medication keep from having heart disease? Perhaps as few as 1%, say the most skeptical.

HOLD THE OAT BRAN a moment. In all the furor, don't forget that cholesterol is good for you, within limits. It's a vital constituent of cell membranes, sex hormones, and the nervous system. Without it, says Dr. Richard Gregg, a research administrator at Bristol-Myers Squibb, "you would be a puddle on the floor." The body makes most of the cholesterol it needs—chiefly from the liver, though almost every other cell can manufacture it. The rest comes from diet. Food rich in saturated fats or cholesterol can drive up levels in the blood.

The biochemical mechanism by which cholesterol causes heart disease remains something of a mystery. Atherosclerosis, the medical term for coronary artery disease, can result when the blood contains too much cholesterol because of either diet or an inherited inability to get rid of it efficiently. Cholesterol attaches to the lining of the arterial walls and hardens into a damaging plaque. White blood cells attack the plaque, creating debris, and simultaneously the artery tries to heal itself by growing more lining cells. Both the debris and the new lining narrow the passageway. If a blood clot gets stuck and blocks the flow of blood to the heart, you can die in minutes.

So what cholesterol level is desirable? The consensus of the American Heart Association, the American Medical Association, and the NCEP is something below 200 milligrams, for all adults. That recommendation is based on statistical evidence gathered from a number of long-term epidemiological surveys. The most famous, conducted since 1948 using 5,127 residents of Framingham, Massachusetts, found that people with cholesterol counts of 240 or higher get heart disease nearly twice as often as those with readings of 200 or less.

continued

REPORTER ASSOCIATE *Jung Ah Pak*

An initial goal of the NCEP, launched in 1985 by the National Heart, Lung, and Blood Institute, is to have all Americans learn their cholesterol level. Next, it encourages people with a count between 200 and 240 to try to reduce it if they share two other risk factors for heart disease—they are male, a smoker, obese, or diabetic, or they have high blood pressure or a family history of heart disease. For starters, the NCEP recommends a low-fat, low-cholesterol diet. If that doesn't work, anticholesterol drugs may be called for. The same prescription holds for those with levels above 240 even if they have none of the other risk factors.

Explains Basil Rifkind, a cholesterol researcher at the institute, which is one of the National Institutes of Health: "The Framingham data show that at any level, higher cholesterol increases the risk of heart disease. We believe 200 is a feasible goal for most Americans. If you want to get the risk to disappear more or less completely, you would have to bring the level below 140."

CRITICS OF THE NCEP assert that the benefits of screening and treatment do not justify the cost for anyone except middle-age men with extremely high levels—most say above 240, others 300 or more. The debate got national attention in September with the publication of the book *Heart Failure* by journalist Thomas J. Moore. Reexamining a number of federally sponsored health studies, Moore noticed that researchers had failed to demonstrate that changes in diet could reduce cholesterol by even 10%. (Thus, anyone with a borderline-high cholesterol level of 230 could not realistically expect to get to the desirable range below 200 through diet alone.) He also questioned the assumption that lowering cholesterol would lengthen anyone's life—or even lessen the risk of heart disease in women, children, or the elderly.

"All of the risk factors we know about account for no more than 50% of the variation in the incidence of coronary heart disease."

Behind the campaign, Moore wrote, is "a medical version of the military-industrial complex" that includes both an overzealous pharmaceuticals industry and doctors' organizations like the American Medical Association. He estimated that giving drugs to five million people would cost billions annually, not to mention the outlay for 30 million to 100 million annual visits to doctors' offices and perhaps 100 million laboratory tests for cholesterol levels.

ANDY FREEBERG

Sonic imaging at Boston's New England Medical Center helps spot clogged arteries early.

Eliot Corday, a professor of medicine at the University of California at Los Angeles, is downright alarmed by the NCEP promoters. "They focus on cholesterol, but there are many other risk factors," he says. "They don't have the evidence, and for Christ's sake, you don't go to work on a billion-dollar program without the facts. It's crazy to make people so neurotic about cholesterol. This prudent-diet thing is not going to give them a day more of life."

ALTHOUGH 15 SCIENTISTS who do research on cholesterol have won Nobel Prizes, the relationship between diet and cholesterol is still only partly understood. Your forebears are important: Researchers say genetic factors explain why people on identical controlled diets have cholesterol levels that differ as much as 30%. Even so, says Peter Kwiterovich, a Johns Hopkins University scientist and author of the newly published *Beyond Cholesterol*, "all of the risk factors we know about account for no more than 50% of the variation in the incidence of coronary heart disease." Research continues at a furious pace. One paper presented at the American Heart Association's annual meeting in November contended that stress-reducing meditation and biofeedback techniques, combined with a vegetarian diet and exercise, could halt or even reverse arterial plaque buildup.

The most compelling research looks at ethnically similar people in different countries. A series of studies beginning in 1965 have compared Japanese in their homeland with Japanese Americans in San Francisco. Average dietary intake of fat and cholesterol in the U.S. group, far from coming close to typically low Japanese levels, equaled those of the average American. So did blood cholesterol—and deaths from coronary heart disease. In San Francisco some ten Japanese American men per 1,000 get heart disease every year. The rate in Japan: two per 1,000, despite the fact that the Japanese smoke more cigarettes and have higher blood pressure than Americans.

The government is about to begin a major study to determine whether women and the elderly of both sexes should follow the NCEP's recommendations. Research is sorely lacking on heart disease in women. A 40-year-old woman's chance of having a heart attack is only one-sixth that of a 40-year-old man. For women, cholesterol levels begin to accelerate around menopause, and so does the risk of a heart attack. By

THE BIG GLOBAL BUSINESS OF CHOLESTEROL DRUGS

DRUG/BRAND NAME Manufacturer	1989 EST. SALES (Millions)	1988-89 CHANGE	AVG. COST ANNUALLY TO USER	NUMBER OF USERS (Thousands)	EFFECTIVENESS	MAJOR SIDE EFFECTS
Lovastatin/Mevacor Merck	$520	+100%	$1,000	1,500	Lowers triglycerides 15%–27%, LDL 24%–39%	Headache, gas, diarrhea, abdominal pain, rash, diminished liver function
Gemfibrozil/Lopid Warner-Lambert	$290	+52%	$525	550	Lowers triglycerides 35%, LDL 11%; increases HDL 11%	Nausea, abdominal pain, gall bladder disease; evidence of cancer in lab animals
Cholestyramine/ Questran Bristol-Myers Squibb	$160	+28%	$810	210	Lowers LDL 20%	Constipation, abdominal pain, gas, nausea
Probucol/Lorelco Dow Chemical	$120	+18%	$775	160	Lowers triglycerides 13%	Nausea, diarrhea, gas, headache, lowering of HDL
Simvastatin/Zocor Merck	$75	*	$850	100	Lowers triglycerides 15%–27%, LDL 24%–39%	Headache, gas, diarrhea, abdominal pain, rash, diminished liver function
Colestipol/Colestid Upjohn	$25	+20%	$750	35	Increases triglycerides 53%; lowers LDL 33%, HDL 3%	Constipation, headache, dizziness, anorexia, fatigue
All Others	$160	+15%	$350	250	—	—
TOTAL MARKET	$1,350	+61%	$723	2,805		

*Introduced only in Sweden in 1988; awaiting FDA approval in the U.S.

SOURCES: PRUDENTIAL-BACHE SECURITIES ESTIMATES; BIOSCIENCE RESOURCE

The worldwide anti-cholesterol market is already more than $1 billion. U.S. government-backed programs for testing and treatment could multiply that many times over. The newest—and costliest—cholesterol-lowering drug is Merck's Mevacor, introduced in 1987, which already commands almost a 40% market share. It appears to have milder side effects than most of its competitors.

age 60, the sex difference in risk disappears entirely. But does that mean women should receive the same treatment as middle-age men? Nor do researchers know the physiological effects of cholesterol-lowering medications on women. Different drugs may be called for. One possibility: estrogen, which apparently keeps cholesterol levels down in women. It was tried on a group of men in the 1960s and abandoned because their heart attack rate went *up*.

Does lowering cholesterol increase the odds of longer life? In the major studies that investigated this issue, people with low cholesterol developed heart disease less often than those with high levels. But the overall mortality rate was the same for both groups. That outcome does not upset most researchers. Says Yale cardiologist Henry Black: "The important point is that coronary heart disease was reduced, not that total mortality wasn't. It's very likely that with longer observation total mortality will turn out to be reduced as well."

Critics warn against the increasing use of cholesterol-lowering drugs. In the past five years the number of Americans on anti-cholesterol medication has risen eightfold, from about 250,000 to two million. Yet a lifetime of drug therapy is expensive, and the side effects can include cancer—and even atherosclerosis. The drugs that have been studied the longest, including cholestyramine and nicotinic acid, are relatively safe. But many find the taste so awful or the side effects so unpleasant that they eventually give them up or take less than a full dose.

DeBakey: 27% of his heart patients have normal cholesterol.

A new class of drugs like Merck's Mevacor, known generically as lovastatin and introduced in 1987, are much easier to stomach. These potent compounds interfere with the liver cells' ability to produce cholesterol. Well over a million people are already on lovastatin, which alarms those who argue that the drug's long-term safety and effectiveness are still unknown. Another potential problem: Low cholesterol may be linked to increased incidence of cancer, gallstones, and strokes. Asks journalist Moore: "Can you change cholesterol levels drastically without upsetting the body? Nobody really knows."

THE DEBATE over how to treat high cholesterol is not likely to be resolved definitively anytime soon. For that to happen, says DeBakey, "we need to understand better how plaque develops in the arteries. In the history of medicine, every disease that has been solved turned out to be caused by a specific agent, such as a virus, bacteria, or a vitamin deficiency. So far we haven't found the cause of atherosclerosis."

The quest for answers about heart disease continues at a frustrating one-step-forward-two-steps-backward pace. A five-year Harvard Medical School study that ended in 1987 found that an aspirin every other day reduced the risk of a first heart attack by 44%. Now a more recent report warns that a daily dose almost doubles the incidence of one kind of heart disease in older men and women and has other serious side effects as well. It's enough to give doctors and laymen alike a splitting headache.

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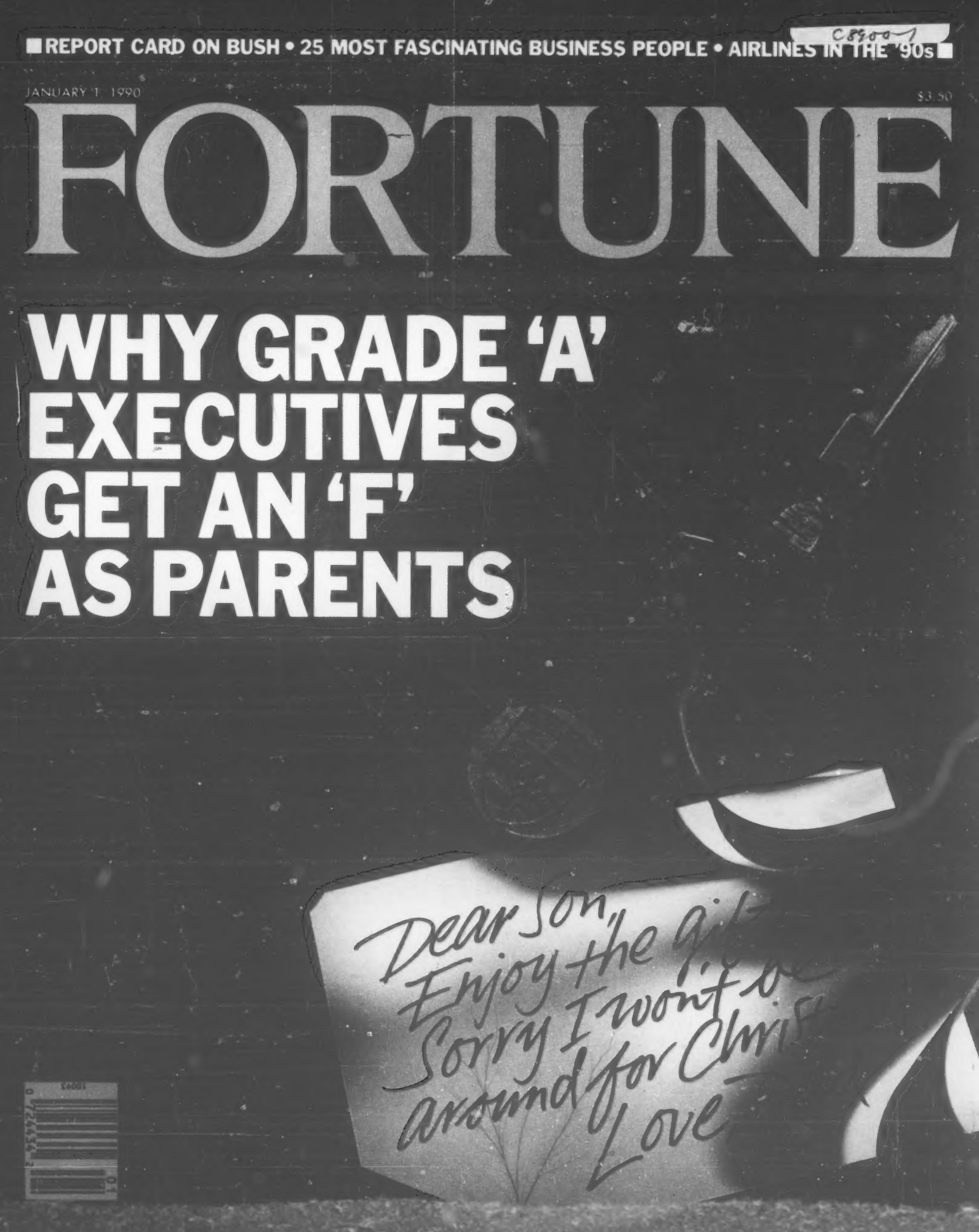
WHY GRADE 'A' EXECUTIVES GET AN 'F' AS PARENTS



JANUARY 1, 1990

FORTUNE

ABOVE: John Harding photographed Darren Butler and his father, Bob, a Chevron executive, at a Little League soccer tournament in Buena Vista, California.

COVER: Photograph by Rita Maas; card lettering by Tim Girvin.

"You can always put things off for the future, but you can't get back the years with your kids."

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EXECUTIVE LIFE/Cover Story

WHY GRADE 'A' EXECS GET AN 'F' AS PARENTS 36

The qualities that make for corporate achievement—intensity and single-mindedness—are often the opposite of what's needed to be an effective mom or dad. That's why successful executives have more trouble raising their kids than all but the very poor. Some parents show how to avoid the worst mistakes. *by Brian O'Reilly*

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Without waiting for a government policy, smart managers can do plenty right now to restore America's edge over rivals who are winning markets worldwide. *by Joel Dreyfuss*

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Give the old Yalie a gentleman's B−. After a slow start, he ended up with a high mark in foreign policy. But in the budget-balancing course, he failed to finish his assignment. *by Lee Smith*

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"I think the public should want higher fares."

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"We are not the sort of people you can take home to mother."

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"We blame the President if things go wrong on his watch. So we should give him credit when things go right."

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He disproves the Japanese adage that "a raised nail gets hammered down."

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"Sony didn't start in very promising surroundings either."

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Kyocera makes ceramic housings for semiconductor chips, and it is far from a household name. What the Japanese most admire about this outfit may surprise Americans: They like its U.S.-style enterprise and innovativeness. *by Gene Bylinsky*

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Not much, not yet. Sure, the Malta summit marks the end of the economic Cold War. But Westerners seeking big profits in this millennium aren't likely to find them. *by Lee Smith*

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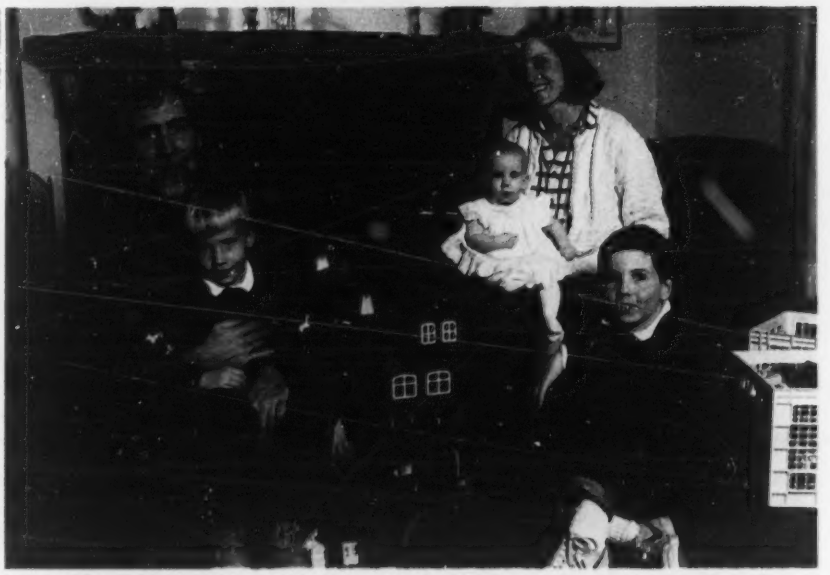
ANDY FREEBERG

Writer Brian O'Reilly at home with wife Gail and children Brendan, Mary, and Paul

THE IDEA came to writer Brian O'Reilly when preparing his recent article on executive health. What, he asked AT&T's medical director, caused its managers the most stress? The rather surprising answer: their children.

That led to this issue's cover story on the executive as parent. O'Reilly invested six weeks in interviewing dozens of psychologists, drug experts, educators—and executives and their children. Their comments reveal rather consistent differences between kids who wind up on the right track and those who find themselves on a troubled path. As O'Reilly and reporter Sara Hammes discovered, the same qualities that serve so well in an executive career—single-mindedness, intensity, a quest for perfection and control—may lead to trouble when dealing with your children.

Just as not spending time simply talking and listening to your children can be damaging, so too can trying to be their best friend by never saying no. Says O'Reilly, himself a father of three: "Kids appreciate and want parents to set limits. It makes them feel secure."

Supervising the story, senior editor Julie Connelly concluded, "Being a parent does not mean just preparing your kids for Stanford or Harvard. It means helping them feel good about themselves in doing whatever makes them happy, not what makes you happy." For some further guidance from the experts, see page 36.

We at FORTUNE share a special bond with you, our reader, and we thought you would be interested in a brief annual report on our magazine. It's gratifying to tell you that in 1989, FORTUNE set records in all departments. Our advertising pages rose 16%, and our advertising revenues were up 22%. We are now the nation's fifth-largest magazine in the former category and the eighth largest in the latter—and that is out of 11,556 magazines published in the U.S. Other business magazines did well too, but FORTUNE's gains in ad pages were the biggest of the bunch.

Our circulation also hit a new high, averaging 775,000 copies—of which about 110,000 are sold outside the U.S. That's an indication to us that we are serving you well—and you have our pledge that we will do even better in 1990 and beyond. Happy New Year!

Marshall Loeb
MANAGING EDITOR

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of **PepsiCo** and chairman of its executive committee, has long been a proponent of opening trade with the Soviets. His counsel: "If you want to go, better get there now. If you wait, someone else will have the business." **– Mark Alpert**

AH, NEXT SPRING IN BUDAPEST

■ Now that the Cold War is over, the hot season for travel to Eastern Europe is about to begin. **Hyatt**, **Marriott**, **Sheraton**, and some other chains farsightedly opened

A new sight in Warsaw

hotels in different capitals.

Besides them, locally owned hotels are plentiful and rate from bumpy to just fine. Jonathan Bodlender, chairman of **Horwath & Horwath**, the London hotel consulting firm, cites Hungary's hostelries "good by any standard." East Berlin's Hotel Palast gets favorable reviews, as do the Intercontinental franchises in Prague and Budapest. Rates for a double room range from $135 to $200 at the Budapest Hilton and $100 to $185 at the Warsaw Marriott.

Getting a seat on a plane may be harder than finding a bed. Eastern Europe's flag carriers, including Czechoslovakia's CSA airline and Poland's LOT, have direct flights from the U.S., but they are usually heavily booked. Among U.S. airlines, **Pan Am** has the largest number of direct flights: three times a week from New York's JFK to Warsaw and Budapest, and weekly from JFK to Prague. **UAL**'s United Airlines and **AMR**'s American Airlines will start Chicago-Warsaw flights in May, pending Polish permission. U.S. citizens need visas to visit all Eastern European countries. **– R.J.**

BANKS—AND SECOND WORLD DEBT

■ U.S. banks see opportunities in Eastern Europe—but don't expect a replay of their disastrous lending spree in the Third World. Says George Salem, a senior banking analyst at **Prudential-Bache**: "They will go in a toe at a time . . . Make that a toenail."

BankAmerica, **Chase Manhattan**, and **Citicorp**, among a few others, are already there, but their loans are minimal (see table). **Manufacturers Hanover** has a Bucharest branch, and Citi has an 80% stake in a Budapest subsidiary.

U.S. banks have lent directly to East European governments. But they prefer to act as middlemen between Western and Eastern dealmakers who often find themselves confronted by nonconvertible currencies.

What's next? Probably the financing of specific projects, such as retooling factories, if their U.S. clients decide to make major investments in Eastern Europe. **– Susan E. Kuhn**

Minimal lending, minimal risk

U.S. BANK LOANS IN EASTERN EUROPE
(in millions, as of June 1989)

Yugoslavia	$1,631
Poland	$282
East Germany	$274
Hungary	$262
Bulgaria	$109
Czechoslovakia	$49
Romania	$4

WHAT'S HOT / WHAT'S NOT

WHAT'S HOT	WHAT'S NOT
Draped Italian suits	
Fake furs	
Arsenio Hall	
Imported vodka	
Japan bashing	
Bond funds	
Animated films	
Ted Turner	
Chapter 11	
White knights	
Texas	
Pearls	

■ As the last decade of the millennium begins, everything that was out is suddenly in again. The Lone Star State, Disney cartoons, and the Mouth of the South are making comebacks, while mink coats and Mexico's Corona beer are now hopelessly passé. Don't throw away your teal-green ties, however. They are still okay. But don't buy any, either: Ties with floral patterns have the edge. Glitz and glitter are doomed to go the way of the 1980s, says Barbara Feigin, executive vice president of Grey Advertising: "The 1990s will be marked by classic expressions of quality," such as intricate craftsmanship and—provided they are real—pearls. **– M.A.**

A NOSE FOR WINE

■ Levers, fans, and long plastic tubes reaching to the level of your nose from petri dishes—glass containers used in laboratory experiments. These are hardly traditional paraphernalia for people wanting to savor the aroma of wine. But such sniffing equipment is a hit among visitors to **St. Supéry Vineyards & Winery** in California's Napa Valley, which introduced two such sniffers in July.

The contraptions let you smell individual aromas that help make up the "nose" of the whites and reds that St. Supéry produces. Experts can tell the quality of a wine by the particular smells of its bouquet. St. Supéry visitors push four levers, each of which opens the cover over a petri dish. A fan

WHY GRADE 'A' EXECS GET AN 'F' AS PARENTS

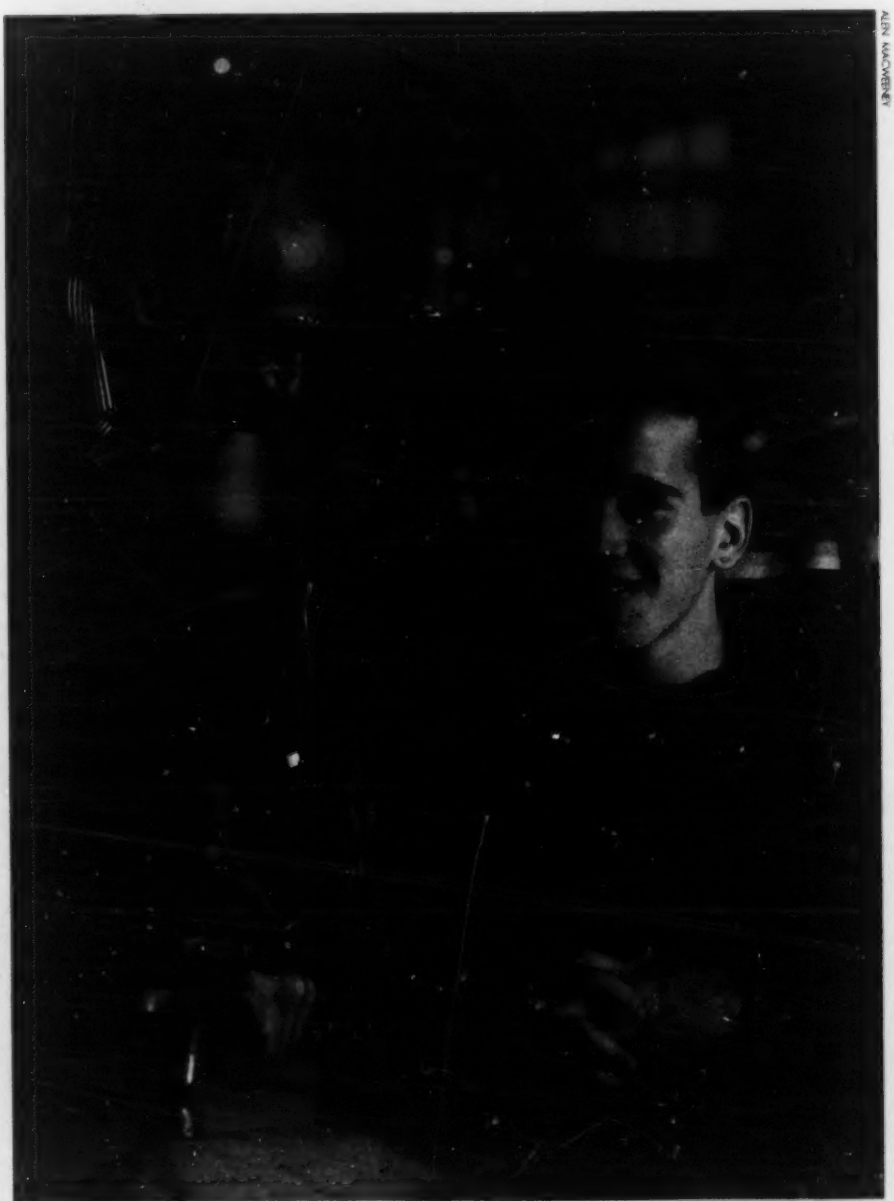
The qualities that make for corporate success are often not what are needed to be an effective mom or dad. Some parents show how to avoid the worst mistakes. ■ *by Brian O'Reilly*

YOU CAN SOLVE that thorny problem in Jakarta with a few crisp commands to your underlings, but ask your teenage son why he got in late last night and you're reduced to impotent fury in seconds. For all their brains and competence, powerful, successful executives and professionals often have more trouble raising kids than all but the very poor. Alas, the intensity and single-mindedness that make for corporate achievement are often the opposite of the qualities needed to be an effective parent.

Six years ago when AT&T was in the throes of divesting its operating companies, Ma Bell conducted a survey of its managers and top executives and discovered that their kids caused these employees more stress and worry than anything else, including their careers. Says attorney Robert Weinbaum, head of antitrust and marketing law at General Motors: "I think it's real tough for kids growing up in families where the parents are highly successful." Weinbaum went through years of turmoil with his own son before they resolved their difficulties.

Many parenting problems are common to everyone: paralyzing uncertainties about how strict or lenient to be, a sense of powerlessness in the face of peer pressure, preoccupation with professional problems, or just plain forgetting what a kid needs from mom or dad. But raising happy, successful children is not a hopeless task or just dumb luck. Interviews with scores of educators, psychologists, drug experts, executives, and troubled teens reveal some consistent differences between kids who turn out "good" and those who go "bad," and provide some suggestions on how to avoid the most colossal blunders.

The most important thing a parent can do for a child is to encourage a high sense of self-esteem. Easier said than done, of course. The tricky part is helping children set appropriate, satisfying goals and then



ALEX MACWHINNEY

Bob Weinbaum, a lawyer at GM, once did everything for his son John—even his homework.

ED KASH

The Yocams greet Apple's John Sculley.

providing an environment that lets them reach the goals on their own. Building your child's self-esteem is an inconvenient, time-consuming, and maddeningly imprecise occupation, and don't be amazed if you mess up. Intuition and good intentions often don't seem to be much help, and you need skills that rival a pilot's ability to land a jet at night on an aircraft carrier. But kids who have a sense of self-worth flourish. Kids who don't are vulnerable to drug and alcohol abuse, unwanted pregnancy, anxiety, depression, and suicide. Even worse, they may not get into Harvard.

In case your long-range plans include working triple time at the office until the brats turn 17, then deftly steering them into the Ivy League, listen up. Serious emotional problems usually start when children are in sixth to eighth grade, and hit crisis proportions by the sophomore year of high school. Says Sheila Ribordy, a clinical psychologist at De Paul University: "By junior year they're on track or in serious trouble."

DON'T THINK your brains, money, or success will pave the way to parenting glory. In a survey of large corporations providing extensive insurance coverage, Medstat Systems, an Ann Arbor, Michigan, health care information firm, discovered that some 36% of the children of executives undergo outpatient treatment for psychiatric or drug abuse problems every year, vs. 15% of the children of nonexecutives in the same companies.

Top executives have special problems as parents. Many are highly educated, driven personalities who routinely put in 12 to 15 hours a day on the job—workaholics, in other words. Says Susan Davies-Bloom, a Connecticut family therapist who treats senior managers: "They are so accustomed to functioning at a high level of control at the office that when they get home, they try to exert the same kind of control."

The milieu that executives attempt to establish at home can be highly stressful for children. The attributes a manager must develop to succeed include perfectionism, impatience, and efficiency. Says Andrée Brooks, author of *Children of Fast Track Parents*: "Contrast those traits with what it takes to meet the needs of a growing child—tolerance, patience, and acceptance of chaos."

During their teens, kids assert their own individuality, rebelling against whatever their parents value most. Unfortunately for the kids of driven executives, what mom and dad often value most is achievement. Says Davies-Bloom: "I find many workaholic executives felt they were mediocre in popularity, grades, and athletics." Frequently the parent tries to create a child who was everything he was not, or thinks he can steer the kid around every pitfall. Sparks fly, and the youngster refuses to perform.

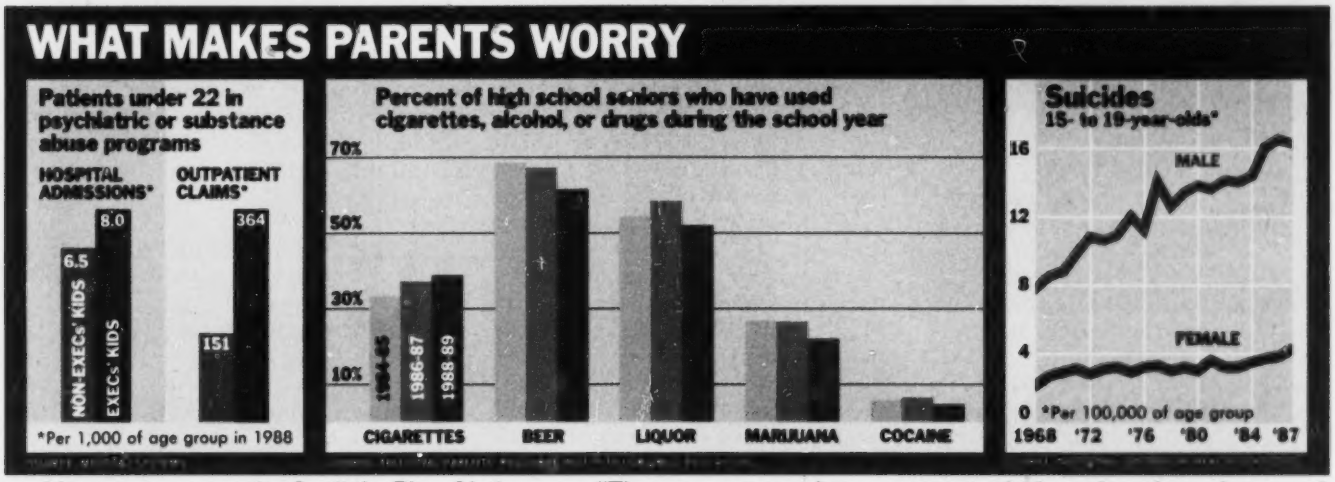
Worse, some parents are so absorbed with their own careers that they scarcely notice their children, who respond by behaving in increasingly bizarre and dangerous ways to attract attention. "My father worried about me from his desk," says the son of an IBM executive. The kid started stealing from his parents—trinkets, at first. But when he took his father's gun and began disappearing at night, family therapy finally began.

GIVEN 70-HOUR workweeks, divorce, or a spouse with a career or demanding social schedule, and complications set in fast. You thought buying a big home in a wealthy suburb would bestow bliss on your offspring? Too often it has the opposite effect. Thousands of business people who were No. 1 somewhere else move to towns where everyone else is successful too. All the other kids in school are very bright and also under pressure to achieve.

Soon the parents wonder why their kid isn't at the top of the class. Says Constance McCreery, formerly a public school guidance counselor in Darien, Connecticut: "In

DON HARDING

Chevron engineer Bob Butler takes time out to coach his son Darren's soccer team.



wealthy towns you get what I call the Big Apple syndrome. It's the problem of keeping all the children full of enough confidence that they *can* succeed."

MOM and a tightknit community used to be able to keep child rearing running smoothly even if dad was putting in overtime. But most younger mothers work nowadays, and wives of senior executives often have commitments that keep them out of the home, even if they don't have paying jobs. Suzanne Gelber, a benefits consultant, was on the board of a day care center in Chappaqua, New York, where most of the mothers who dropped off their kids did not work. "They have so many philanthropic and social responsibilities that they are very busy women," she says. "They are not home baking brownies."

Nobody can prove that children with nannies wind up in reform school more often than those who don't, but some kid watchers are concerned. Says Tom Collins, executive director of Fairview Deaconess Hospital, an adolescent drug treatment center in Minneapolis: "Every move you make away from kids in pursuit of your own happiness and career increases their chance of getting into trouble. Lending kids out to babysitters and day care makes it a crap shoot."

Ask a bunch of educators how life for well-to-do kids has changed over the years and you get a surprising answer: The children are under far greater strain than their parents ever were to perform well academically and win acceptance to high-prestige colleges. At New Trier Township High School near Chicago, principal Dianna M. Lindsay says, "The pressure to get into a name-brand college is monumental. I see kids buckle under it."

Part of the stress is classic pushy-parent stuff. Says Carol Perry, director of counseling at the exclusive Trinity School in Manhattan: "This is an era of designer children. No parent wants an average child." Adds Lindsay: "Parents want their kids to go to a school whose name is recognized at the country club."

Much of the mounting anxiety springs not from overt parental pressure, however, but from the students themselves, whose values have been not so subtly affected by mom and dad's affluence. Many well-off kids have grown up using a financial yardstick to evaluate themselves and others. But the prospects for these wealthy kids to improve on or at least maintain their current lifestyles are frighteningly slim. "Successful moms and dads come here because the environment breeds success," New Trier's Lindsay observes, "but the kids say, 'I can never match this. This is the best my life will ever be.' "

Students at New Trier are encouraged to do social service, such as working in soup kitchens, and once a year they are asked to fast for a day in recognition of world hunger and donate lunch money to the poor. Says Lindsay: "We have to teach the kids there are other standards besides material possessions. It's a real, serious problem."

The predictable consequences of all the stress on kids: alcohol, drugs, and suicide, the ultimate parental nightmare. Teenage suicide rates doubled between 1968 and 1987, to 16.2 per 100,000 boys and 4.2 per 100,000 girls. Suicide now ranks as the second cause of death, after accidents, among 15- to 19-year-olds. Some factors that prompt suicide, such as depression caused by the death of a loved one, are not the result of demanding parents. But pressure to do well in school and athletics is a contributor to suicide, and children in a close-knit family are less likely to kill themselves than kids without strong family ties.

Though drug use appears to have peaked in the early 1980s, it is still very high. According to the University of Michigan's Institute for Social Research, more than half of all high school seniors have reported using an illicit drug at some time in their lives—usually marijuana—and a third have tried something stronger. Virtually all seniors—92%—have experimented with beer or hard liquor, and in the two weeks before the institute's survey was taken, 35% had been drunk at least once although every state now bans drinking under age 21.

RARE IS THE PARENT who cannot recall sneaking more than a few beers in his or her youth, but the prevalence of teenage drinking has many people worried. Donald R. Geddis, the principal at Summit High School in New Jersey, is more concerned about the use of alcohol among his students than he is about any other substance. "Its use is so widespread it outstrips all others," he says.

Drinking is starting early—the average age for that first surreptitious sip is 13—before many children have developed better methods of coping with stress. Youngsters are aping the attitude of adults: "I've had a tough week and I'm entitled to blow off a little steam." Worse, drunk kids are also more likely to experiment with other drugs they would shun while sober.

Since practically every kid drinks and most experiment with drugs, what distin-

REPORTER ASSOCIATE *Sara Hammes*

CHARLIE ARCHAMBAULT

A stoic cadet gets discipline from a superior officer at Valley Forge Military Academy.

guishes those who tinker with the stuff from those who develop a serious dependency is "the degree of anxiety for which they are seeking surcease," says Virginia Kramer Stein, a clinical psychologist in New Jersey. Although no kid is as supremely self-confident as many try to appear, youngsters who think of themselves as losers or unwanted by their busy parents, or who have trouble making friends, are at a higher risk of abusing alcohol and drugs than other kids.

When they drink or take drugs, many kids feel transformed for the first time from awkward geeks into cool and appealing characters. "Addiction has a lot to do with self-esteem," says Jeri, 16, the daughter of a Minneapolis-area businesswoman. Jeri started drinking at 11; then her sister introduced her to marijuana, which she smoked every day through much of her first year of high school. By the time she was in tenth grade, she was caught selling grass, and sent to a rehabilitation program at Fairview Deaconess.

HOW DO PARENTS reduce the stress on their kids, boost their self-esteem, and keep them off drugs? Says Summit High's Geddis: "If I've learned one thing, it is that the main priority for parents is to help their kids find something that makes them feel good about themselves. That's the greatest deterrent to drugs and alcohol."

An important first step is to ease up on relentless pressure to make the youngster perform well in school. Focus only on grades and you're handing the kid a weapon to punish you with. If the child appears "only average" but is attending one of the toughest high schools in the country, find out where he or she ranks among peers on standardized achievement tests. That will help you know whether a B or C average is reasonable.

Do not greet your children every evening with an ostensibly cheery "How'd you do in school today?" It is a very threatening question and often elicits no more than a mumbled "Okay." Good grades help get you into a top college but don't predict a happy, successful life, says Robert Klitgaard, former faculty head of admissions at Harvard's Kennedy school.

In case you forgot, success in high school is not achieved the same way as success in a corporation. You get ahead in a company by climbing the ladder and paying your dues, concentrating on things you're good at, and delegating or avoiding areas where you are not competent. You may be a whiz at corporate finance in part because the job does not require you to decline French verbs or find the area of an isosceles triangle. But your sophomore does not have the luxury of hiring a Harvard MBA to do her homework.

continued

A DeSisto School therapist, left, leads a group session in which the young man lying on the kids' laps learns to trust the other students.

ARLENE GOTTFRIED

Don't ignore the possibility that the apple of your eye simply is not as smart as you are. Children have roughly the same IQ as the average of their parents', but there are plenty of deviations. About 7% of the time, a child will be 15 points higher or lower than the parents' average, and one time in a thousand, a 30-point difference will pop up.

THE AVERAGE college graduate has an IQ of 115 and Ph.D.s typically score 130, according to John E. Hunter, a professor of psychology at Michigan State University. "It doesn't take much of a slip, and the child of parents who struggled to get through college will not be able to make it," he adds. (Of course, there's an equal chance your daughter is justified when she calls you stupid.) Though you may be a genius yourself, if you married a good-looking but dim bulb, you can't expect your progeny to send rockets to Mars. If your kid has been a whiz all along, however, and his grades collapse in high school, emotional or drug problems are the likely culprits—not his IQ.

Spend time with the family. Ordering your secretary to book 50 minutes of "quality time" into your schedule is better than nothing, but quality time has a habit of fitting your routine, not the kids'. Del Yocam, 45, former chief operating officer at Apple, religiously went home for dinner at 7 P.M. at least twice during the week, and avoided business commitments on weekends. "The children have come to expect it," says Yocam. In November he retired from Apple. His devotion to his family didn't hurt his career there, Yocam says, but "it's time to move on to other things."

Hugh McColl, chairman of NCNB, the big Southern regional bank, cut out weekend golf and reduced entertaining at night years ago to have more time with his three children. But he still has some regrets about the time he spent away from home. He was coaching his son's YMCA basketball team in the early 1970s, and a league championship game was looming. Instead McColl went to a banking convention, and the team lost by two points. "My son still blames me," says McColl with a laugh. "He figures if I'd been at the game he would have won."

Says Levant, a psychologist: "Men are not trained to be empathetic listeners. We're taught to listen to our opponents to discover their weaknesses."

Robert Butler, a senior engineer at Chevron in San Francisco, is also determined not to let his job overwhelm his family. He schedules time for his children, leaving for the office at dawn on days he has to depart early to coach his son's soccer team. Says he: "You can always put things off for the future, but you can't get back the years with your kids."

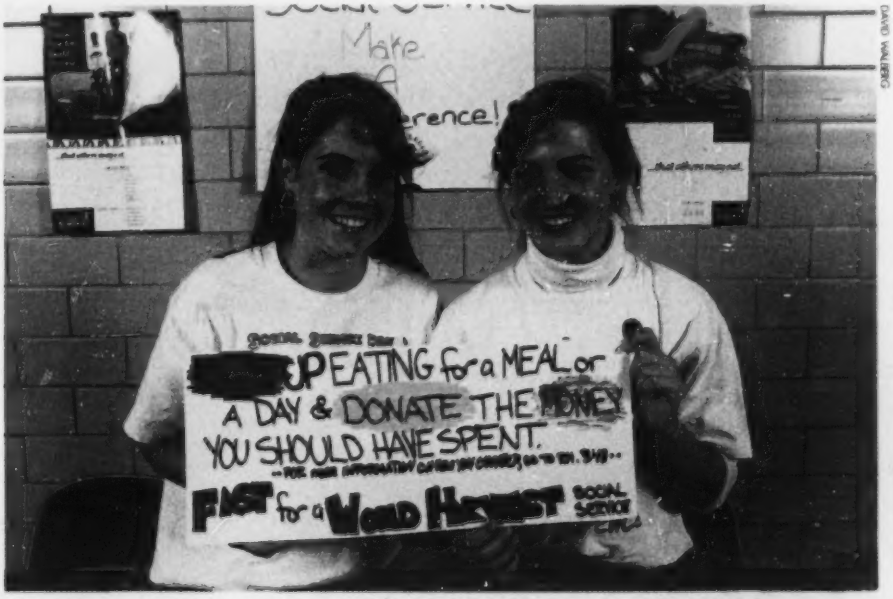
Use the time you spend with the children to listen sympathetically to them. That skill is particularly difficult for men to acquire, according to Ronald Levant, a Rutgers University psychologist and author of *Between Father and Child*. "Men are not trained to be empathetic listeners," he says. "We're taught to listen to our opponents to discover their weaknesses." Men see themselves as problem solvers, not as shoulders to cry on.

Thus, the father who comes home and sees that his 15-year-old daughter has just eaten a whole box of Oreos will probably want to warn her about pimples and weight. Resist the urge. Just let her pour her heart out. Don't be hurt or angry if she doesn't respond the first dozen times you try to be understanding. If you've been a clod for the past 15 years, she may be confused or think you're trying to trick her.

You may learn from all that listening that your son really doesn't want to go to Stanford, is the laughingstock of Kenilworth when you force him to practice drop-kicking at the country club, and dreads following your footsteps into the brake shoe business because he can't figure out what a brake shoe *is*. Fight the desire to disown him, and he may confess that he is fabulous at lawn bowling and likely to get a scholarship from East Cowflop University to study French cooking.

Go lawn bowling with him and let him whip up some frog legs Provençale for you. You won't enhance your bragging rights with the board of directors, but you will do wonders for his self-esteem. And you could be pleasantly surprised: You may find that a newly energized youngster has replaced the sullen adolescent of just a few weeks before. "There are no lazy teenagers," says Carol Perry. "More likely they're turned off or depressed."

SOME PARENTS conclude that boarding schools can do a better job of teaching and raising their children than mom or dad will. For example, a single parent who has to travel on the job might want the youngster in a stable environment that provides a sense of security for both child and parent. Such places range from exclusive prep schools



DAVID VALBERG

Once a year, students at New Trier High fast and donate their lunch money to the poor.

such as Groton, Exeter, and Lawrenceville, which rival Ivy League colleges in admission requirements and costs; to less well-known but highly regarded private institutions such as the Webb Schools in Claremont, California, St. Stephen's Episcopal School in Austin, Texas, and Wayland Academy in Beaver Dam, Wisconsin; to military academies like Valley Forge in Pennsylvania that boast of instilling "conservative Christian values" in their charges.

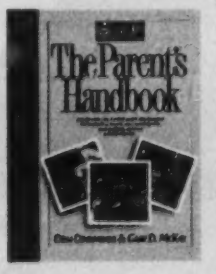
Then there are boarding schools where many of the kids have serious behavioral and emotional problems, among them drug abuse, petty theft, truancy, or depression. Among these academies are Cedu in Running Springs, California, Franklin Academy in Sabbatus, Maine, and the Brown Schools in Texas. Bob Weinbaum, the GM attorney, sent his son John to the DeSisto School, a prep school in Stockbridge, Massachusetts. With the Broadway producer Joseph Papp among the first board members, Mike DeSisto, a rumpled Catholic exseminarian who once ran a private school on Long Island, started the school in 1978. The annual tuition of $19,000 is more than the cost of a year at Yale.

In addition to a rigorous academic schedule, DeSisto students undergo multiple private and group therapy sessions each week. But an important part of their development occurs as the kids learn to be accepting of each other and affectionate. Most conversations seem to begin and end with vigorous bear hugs. DeSisto himself is both warm and demanding. He lets kids pile onto his living room sofa and fall asleep on his lap until the 10 P.M. curfew. But kids don't "graduate" until they complete the course requirements, perform well at increasingly difficult and responsible campus jobs from washing dishes to assigning dorm rooms, and demonstrate they can be effective "parents" for newer arrivals.

If you're committed to winning the Dad or Mom of the Year Award, one of the biggest and most common mistakes you can

A REPAIR MANUAL FOR FIXING RELATIONSHIPS WITH YOUR KIDS

If you spend most of your workday racing through terse memos to prepare for that presentation on expansion strategies for the 1990s, you're going to find it tough to absorb homey suggestions on child rearing. Touchy-feely stuff like "Help your children feel useful by identifying their talents and suggesting ways they can contribute to the family" may make your flesh crawl.



Giving goose bumps to executives hasn't hurt psychologists Don Dinkmeyer and Gary D. McKay, authors of *The Parent's Handbook* (American Guidance Service). The $9.95 paperback has sold nearly two million copies, making it one of the most successful publications ever on raising kids. Among its virtues is practicality. The book is short—only 127 pages including cartoons—and reads more like a repair manual than a scholarly treatise.

When McKay and Dinkmeyer were guidance counselors in the Midwest two decades ago, they were bombarded with questions from parents who, says McKay, "with the best of intentions, didn't know how to help their kids learn responsibility." The two men put together course material to help teachers, clergy, and school counselors, among others, lead group training sessions for frustrated parents. The *Handbook* is part of the course but useful on its own and available in most bookstores. Herewith some of the book's advice for moms and dads:

■ Don't give a child attention on demand, even for positive acts, because you will foster an inappropriate desire for the spotlight. Youngsters can easily come to believe that if you are not focused on them 100% of the time, you don't care about them.

■ Tell your children you love them, especially when they are not anticipating such a comment. Nonverbal signs such as pats, hugs, kisses, and tousling their hair are also extremely important.

■ Encourage kids rather than praise them. Praise is a reward given for winning and being the best. Encouragement, by contrast, is a reward for effort or improvement, however slight. It makes a child feel worthy, as in "I have confidence in your judgment" or "You seem to like that activity." Some praise is appropriate, of course. If the child hits a home run, go ahead and shout, "*Wow*, what a hit! That was great." Just don't restrict your pride in the child to his or her accomplishments.

■ Listen to your kid. Think of a feeling that describes the emotions a child is expressing—bored, guilty, vengeful, or happy, accepted, respected. When your son says, "That teacher is unfair. I'll never do well," don't respond with, "Of course you will. What's the matter with you?" Try: "You're angry and disappointed and you're thinking of giving up." The second response shows acceptance and concern so the child will be encouraged to tell you more.

■ Avoid blaming and criticizing your children. They will correct misbehavior faster if you dispassionately describe how that lapse interferes with your needs or rights. Instead of screaming "You came home three hours late last night, you idiot!" try "When you don't call or come home at the time we've agreed on, I worry that something might have happened to you because I don't know where you are."

■ Let your youngsters experience the consequences of their behavior once they know enough to make informed decisions. Children who won't eat go hungry; those who dress inappropriately get cold or get razzed by their peers. Buy good food that they like, but don't force them to eat it. The difference between dishing out punishment and letting them experience consequences is often in your tone of voice. If your son loses dad's hammer, you don't have to yell or threaten. The child should simply buy a new one. Dad is also justified in coolly explaining that junior apparently isn't ready to use Dad's tools.

■ Treat your children with the courtesy and sensitivity you reserve for your friends. With luck, they may turn out to be some of your very closest friends.

make awaits you: being a wimpy and overprotective parent. Says Gary McKay, co-author of *The Parent's Handbook* (see box): "One of the greatest handicaps a child can suffer is to be raised by a 'good' parent."

These well-meaning types try to do everything for the kids, rushing upstairs five times to wake them for school, exhorting them to eat breakfast faster, and driving them to school when they miss the bus. All this service winds up depriving the kid of self-confidence and independence, says McKay. Far better to be a "responsible" parent. Buy the youngster an alarm clock, explain that breakfast ends at 7:30, and if he misses the bus let him walk to school. Don't scold, don't say, "I told you so," don't debate, don't give in.

Bob Weinbaum fell into a good-parent trap, trying so hard to be a "fair and reasonable" father that he was coming across as overprotective, vague, and indecisive to his son John. "In retrospect, I wish I had remembered that *I* was the father—that *I* was the one in charge," says Weinbaum, whose credits include winning federal approval for the GM-Toyota deal in Fremont, California, and managing his son's baseball team. John grew up with a lot of love and attention, but Weinbaum now admits he tried to do too much for his son, even his homework. "John told me once I was so involved, I made him feel incompetent."

By the time John was a sophomore in high school, their relationship was in tatters, and both parents were worried. "I remember his violent outrages and kicking the door apart," says Weinbaum. "He was in a lot of pain." Schoolwork deteriorated, and the parents began finding marijuana butts on the floor. When the son started going to parties and not coming home at night, Weinbaum was frazzled. An adolescent treatment center in Detroit determined John's problems were not drug-related, so Weinbaum wound up sending John to the DeSisto School. He graduated in three years and is now at a college near Baltimore.

For all three years Weinbaum and his wife attended monthly group support meetings with other DeSisto parents in the Detroit area and gradually learned how to improve relations with John. "He is a spectacular, wonderful son," says Weinbaum today.

ANN CUTTING

Kids show care and support for each other at DeSisto.

If you plan to run out and start putting your foot down, do not mistake harshness or violence for firmness. Says one tall 17-year-old student at DeSisto: "My father used to throw me up against a wall, demanding that I get better grades. But there was never any follow-through." The boy wanted his parents to talk to him about why he was having trouble in school and offer some help, but they did not. Says he: "Parents often think if they've yelled and sent you to your room that their job is done."

Since so much experimentation with drugs and alcohol begins in the preteen years, start long before they're in sixth or seventh grade to communicate with your children, and practice being assertive. Says Bruce Thompson, superintendent of the middle school in Woodside, a San Francisco suburb: "This is the best time to catch them. They're still little kids, on the way to adults."

How strict is strict enough when dealing with kids on the verge of becoming teenagers? "You ask kids where they're going when they go out," says Thompson. "They do their homework and you check their homework. They show up for dinner, they don't go out on school nights, and when they say they're sleeping over at Johnny's, you call up Johnny's parents and ask if they will be home that evening. Will the child complain? Yes."

When kids in middle school and high school do go out at night, parents should be up and awake to greet them when they return. Says Tom Collins, head of Fairview Deaconess, the drug rehab center in Minneapolis: "Sit down and talk with your kids when they come in. You should be able to say to them, 'You look weird. Have you been doing drugs?' "

If you take time to observe a teen, you can soon tell whether he's drunk or stoned. Do kids want to be stopped? Absolutely. "If you don't see it soon enough," Collins warns, "your child will go through lying, stealing, cheating. It gets rolling and you can't stop it until the kid is in so much pain he wants treatment."

Many parents don't even suspect a problem until they find drugs or get a call from police or school officials. Warning signs that a kid is becoming an abuser include suddenly erratic grades, skipping school, dropping out of extracurricular activities, avoiding the family, swings in mood, violence, depression, no savings from a part-time job, and a crop of unfamiliar and unimpressive new friends.

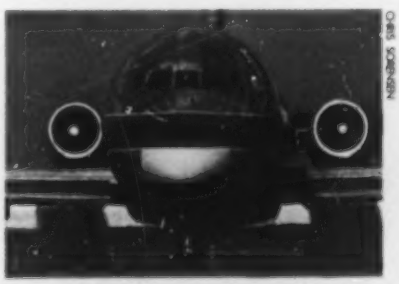
MOST PARENTS will never have to deal with anything more serious than their own chronic sense of clumsiness and frustration. In case you think you are hopelessly inept and suspect your kids secretly fired you a long time ago, be assured that you are far more influential than you suspect. "The best manipulation parents have is their attention. It is an extraordinary power that most of them neglect to use," says David, 17, the troubled son of a high-ranking Ford executive. "Parents are very important to kids—more than they will ever let on." ■

REVOLUTION IN THE AIR

Deregulation is shaking up international airlines' tidy world. Even Europeans now have to compete. ■ *by Wilton Woods*

THE ADJOINING TABLE shows the world's 50 biggest passenger airline companies, measured by 1988 revenues. Beneath the numbers lies a new reality: Swift changes are sweeping over—and shaking up—this global business. The U.S. megacarriers, turned loose by deregulation a decade ago, are spreading their wings across the oceans and forcing realignments around the world in the long-clubby industry. The Europeans are responding to the challenge, and the Asians are gaining ground rapidly.

Not long ago Europe's carriers divided up the routes in the home territory among themselves, set high prices, and split the profits. But the European Community is pushing toward its own deregulation in 1992, and already the game has vastly changed. Old war horses like British Airways have been rejuvenated by privatization, and upstart entrants have joined the battle for customers. European airlines have had to learn how to compete on price and service, and efficiency is at a premium.



CHRIS SORENSEN

Cleared for takeoff into a new world

To enhance efficiency, European carriers—including British Airways, Lufthansa, and Air France—have signed up with two new computer reservation systems that provide flight schedules to travel agents. One is linked to UAL's Apollo system, the other to Texas Air's System One. Believing that only the strongest will survive, many lines have placed orders for costly new planes and are planning to increase marketing budgets. Smaller carriers are looking for allies. Belgium's Sabena is planning to sell shares to British Airways and KLM, while Swissair and SAS are forming a partnership and buying each other's shares. Even heavyweights like Air France and Lufthansa are signing agreements to sell their services jointly in Europe and around the world.

Along the Pacific Rim, airlines have been surging as business and tourist travel booms in the prospering region. U.S. carriers are fighting to get more of the growing traffic across the Pacific, while Asian airlines are opening new routes to Europe. Air New Zealand has gone private, and Qantas may do so because the Australian government doesn't want to pay for a new fleet of planes.

All but two of the companies on this list showed increases in revenue in 1988, measured both in dollars and in their own country's currency. UAL, one of the exceptions, was deconglomerating by selling off some hotel and car rental operations. But the company's *airline* revenues were up.

The world's largest airline in terms of passenger volume, the Soviet Union's Aeroflot, is not on this list because the government does not provide meaningful numbers on revenues and profits. In 1988, Aeroflot, which spans a continent-size country without any competition and also flies to 100 foreign countries, logged 132.5 billion revenue passenger-miles. Its socialist service is such that Aeroflot's passengers often hold it up as an object lesson in the superiority of the free-market system. Even the People's Republic of China was getting ready to allow competition for its monopoly airline, CAAC (15.9 billion revenue passenger-miles annually), before economic reforms came to a halt. But freer—and stiffer—competition is clearly in the air for most of the world's airlines. ■

REPORTER ASSOCIATE *Mark Alpert*

THE TOP 50 AIRLINE COMPANIES

Rank by revenues		Country
1	UAL	U.S.
2	AMR	U.S.
3	TEXAS AIR	U.S.
4	JAPAN AIR LINES[1]	JAPAN
5	DELTA	U.S.
6	LUFTHANSA	WEST GERMANY
7	BRITISH AIRWAYS[1]	BRITAIN
8	AIR FRANCE	FRANCE
9	USAIR GROUP	U.S.
10	NWA	U.S.
11	ALL NIPPON[1]	JAPAN
12	SCANDINAVIAN AIR SYSTEM	SWEDEN
13	TRANS WORLD	U.S.
14	PAN AM	U.S.
15	HANJIN GROUP	SOUTH KOREA
16	ALITALIA	ITALY
17	SWISSAIR	SWITZERLAND
18	IBERIA	SPAIN
19	KLM[1]	NETHERLANDS
20	AIR CANADA	CANADA
21	QANTAS[2]	AUSTRALIA
22	SINGAPORE[1]	SINGAPORE
23	CATHAY PACIFIC	HONG KONG
24	PWA	CANADA
25	SAUDIA	SAUDI ARABIA
26	VARIG	BRAZIL
27	THAI INTERNATIONAL[1]	THAILAND
28	ANSETT TRANSPORT[1]	AUSTRALIA
29	JAPAN AIR SYSTEM[1]	JAPAN
30	AIR INTER	FRANCE
31	GARUDA	INDONESIA
32	SABENA	BELGIUM
33	AIR EUROPE[1]	BRITAIN
34	CHINA	TAIWAN
35	UTA	FRANCE
36	FINNAIR[1]	FINLAND
37	AIR NEW ZEALAND[1]	NEW ZEALAND
38	LTU	WEST GERMANY
39	SOUTHWEST	U.S.
40	ALASKA AIR GROUP	U.S.
41	TAP	PORTUGAL
42	OLYMPIC	GREECE
43	AUSTRALIAN[2]	AUSTRALIA
44	AER LINGUS[1]	IRELAND
45	AMERICA WEST	U.S.
46	AEROLINEAS	ARGENTINA
47	MEXICANA	MEXICO
48	AIR INDIA[1]	INDIA
49	S. AFRICAN AIRWAYS[1]	S. AFRICA
50	INDIAN[1]	INDIA

1988 REVENUES			PROFITS		TRAFFIC		COMMENTS
	% change from 1987				Billions of passenger-		
$ Millions	U.S. dollars	Local currency	$ Millions	Rank	miles	Rank	
9,014.6	(18.1)	—	$1,124.3	1	69.1	1	Owns United. Still unanswered: Who will wind up owning UAL?
8,824.3	22.6	—	476.8	2	64.8	3	Parent of American, which is overtaking United as the largest U.S. carrier
8,572.9	1.2	—	(718.6)	46	69.0	2	Took over Continental and Eastern. SAS has 9.9% stake. Still battling unions.
7,249.7	19.7	11.0	145.0	14	28.3	10	Flies more passenger-miles across the Pacific than anybody. Privatized in 1987.
6,915.4	30.0	—	306.8	6	49.1	4	Strong U.S. route system. Swissair owns 5% and Delta owns 5% of Swissair.
6,739.9	9.5	7.0	44.1	29	26.4	11	Proudly punctual. Government owns 51%. Has marketing ties to Air France.
6,690.4	25.0	15.1	331.3	5	30.5	7	Since the government got out, has become No. 1 international carrier.
5,953.7	9.2	8.1	193.5	10	21.4	12	Still flying the flag of France. Link with Lufthansa helps sell tickets.
5,707.0	90.2	—	165.0	12	30.4	8	Expanded from Northeast base by acquiring PSA and Piedmont in past two years.
5,650.4	9.9	—	135.1	17	40.1	5	Parent of Northwest, largest U.S. Pacific airline. KLM is buying a stake.
4,427.4	25.1	10.8	45.9	28	14.6	16	Domestic line going international. Routes stretch to Washington, D.C.
4,412.0	15.3	11.4	N.A.	—	8.7	26	Governments of Sweden, Denmark, and Norway share 50% ownership.
4,361.1	7.5	—	249.7	8	34.8	6	After taking over in 1985, Carl Icahn made the struggling carrier profitable.
4,165.1	15.9	—	(72.7)	43	29.0	9	The glory days are long gone; lost money in seven of the past eight years.
3,731.9	34.0	19.1	76.2	21	9.4	24	Parent of Korean Air Lines. Also owns an oceangoing container ship line.
3,258.1	5.1	5.5	368.6	3	11.5	20	Along with British Airways, has marketing alliance with United.
2,927.8	9.1	7.1	52.0	25	9.2	25	In addition to its stake in Delta, is forming a partnership with SAS.
2,874.2	16.1	9.5	208.2	9	13.0	18	Though the government still owns Iberia, privatization is expected.
2,823.2	6.4	3.8	158.7	13	14.5	17	On top of its interest in Northwest, wants a piece of Belgium's Sabena.
2,777.8	17.6	9.4	77.8	20	15.6	14	Profits set a record after the government sold shares to the public.
2,257.5*	26.4*	15.1*	139.8*	15	14.6	15	Government-owned international carrier; has stake in Air New Zealand.
1,993.0	20.5	15.2	299.0	7	16.0	13	Famous for service in the Far East; now has a marketing link with Delta.
1,933.5	28.8	28.9	361.6	4	12.5	19	Riding the Asian boom, but outlook for its Hong Kong base is cloudy.
1,764.1	25.0	16.3	24.6	33	11.2	21	Parent of Canadian Airlines International, Air Canada's main competitor.
1,697.2	(5.6)	(5.6)	(177.6)	45	9.6	22	The kingdom's airline does big business carrying pilgrims to Mecca.
1,531.2	16.9	1,066.1	(32.6)	42	8.6	27	Best service in Latin America. Employees own 85% of the stock.
1,428.0	30.3	27.6	165.1	11	9.4	23	Government-owned line acquired Thailand's domestic carrier in 1988.
1,314.3	35.0	23.0	133.6	18	7.0	32	Operates airlines in Australia and New Zealand. Rupert Murdoch owns half.
1,258.5	18.9	10.2	17.1	37	4.1	43	Fast-growing private competitor of Japan Air Lines on international routes.
1,238.7	10.2	9.1	24.9	31	4.7	42	Privately owned domestic French carrier; losing passengers to fast trains.
1,104.8	21.6	29.0	52.1	24	7.9	28	To fly from one Indonesian island to another, you have no other choice.
1,093.5	4.3	3.1	9.1	40	4.1	44	British Airways wants a stake along with KLM. Extensive African routes.
1,085.2	N.A.	N.A.	22.2	35	7.4	30	Tour-package charter operator expanding into scheduled service.
1,035.7	17.3	5.3	64.1	22	6.0	35	Investor-owned line will get competition from a new carrier in 1990.
1,024.9	8.3	7.3	131.5	19	3.4	48	Privately owned French airline with routes in Africa and South Pacific.
1,022.6	25.2	19.2	14.8	38	4.8	41	Still 70% government owned, but plans to offer more shares to public.
1,017.1	12.1	1.4	46.2	27	6.1	34	Privatized in 1989. AMR owns 7.5%, Japan Air 7.5%, Qantas 19.9%.
963.3	22.0	19.3	N.A.	—	5.3	38	International tour package and charter operator; privately owned.
841.8	8.2	—	58.0	23	7.7	29	A model for deregulation, it expanded from routes wholly within Texas.
814.4	14.7	—	37.5	30	3.9	45	Prospering in a regional West Coast niche with emphasis on service.
800.0*	41.9	48.9	N.A.	—	3.5	47	Longtime state-owned money loser is struggling to turn around.
799.5	9.9	15.2	(77.2)	44	4.9	40	Once owned by Aristotle Onassis; the government can't make it pay either.
792.9	28.2	16.8	36.7	31	3.6	46	State-owned domestic carrier was crippled by a pilots' strike in 1989.
785.3	6.2	3.6	49.1	26	1.8	49	Homesick Irish emigrants pack the government airline's planes back to the old sod.
775.7	34.8	—	9.4	39	7.1	31	Most successful of post-deregulation startups. Ansett of Australia owns 20%.
773.5	49.5	360.4	23.9	34	5.1	39	The government tried to sell control to SAS in 1988, but deal fell apart.
749.2	19.1	96.4	135.3	16	6.7	33	Foreign investors are welcome. Sir James Goldsmith is among them.
736.4	3.0	10.6	(31.2)	41	5.6	36	Recently spiffed up its planes to attract international business travelers.
709.0*	N.A.	N.A.	N.A.	—	N.A.	—	Seeking a low profile, the government no longer releases figures.
665.6	4.0	11.7	21.7	36	5.4	37	Government-owned domestic carrier with cheap fares. You get what you pay for.

*Estimate. †Figures are for fiscal year ended March 31, 1988. ‡Figures are for fiscal year ended June 30, 1988.
§Figures are for fiscal year ended September 30, 1988. ¶Figures are for fiscal year ended October 31, 1988.

GETTING HIGH TECH BACK ON TRACK

Without waiting for a government policy, smart managers can do plenty to restore America's edge over rivals who are winning markets worldwide. Here's how. ■ *by Joel Dreyfuss*

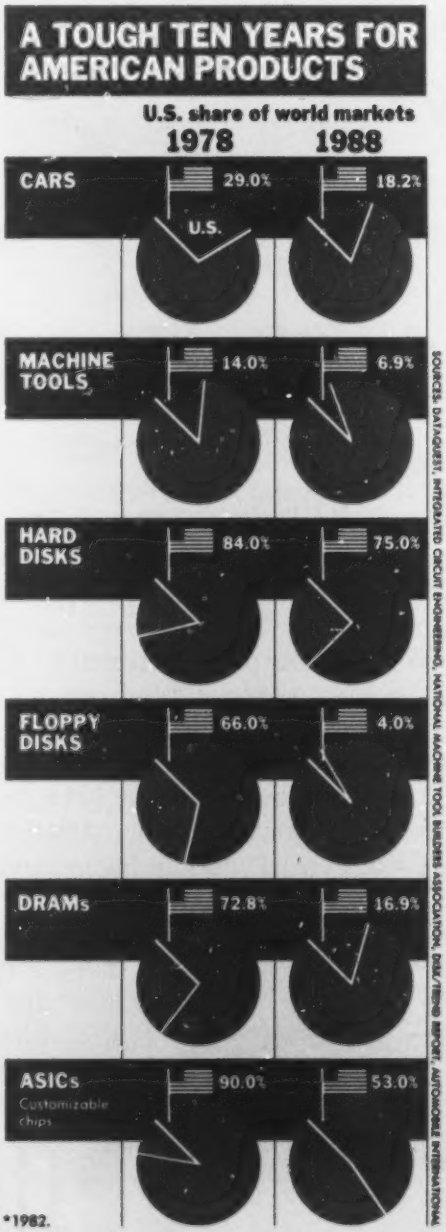
YOU'VE GOT TO WORRY about American technology when the newspapers seem to tell you there's less of it every day. Nikon emerges as the leading candidate to buy the division of Perkin-Elmer that makes semiconductor manufacturing equipment, one of the few major U.S. operations left in that business. Japan's Chugai Pharmaceutical buys Gen-Probe, a California biotech company—the first outright Japanese takeover in that industry. France's Groupe Bull is set to acquire the computer business of Zenith Electronics, the biggest U.S. player in the fast-growing laptop computer game.

At least those U.S. companies are getting handsome sums for the technology they're giving up. Many others are participating in joint ventures or licensing arrangements that allow foreigners to get control of their technology and use it against them. And far more are simply losing to foreign competitors in a wide range of high-tech industries that will be critical in the economy of the future (see chart).

Most Americans know that in semiconductor manufacturing, memory chips, machine tools, and consumer electronics the U.S. has fallen far behind the rest of the world. They may not know that where America still leads—in advanced computer chips, supercomputers, composite materials—overseas companies are coming on strong. Japan has launched well-organized research efforts in such technologies of tomorrow as superconductivity and high-definition television. More than America's economic welfare is at stake: The Pentagon considers 22 technologies vital to U.S. security, and America leads the world in just ten of them (see table, page 76).

What to do? Some people advocate letting free markets do their work, arguing that they lead to the best investment choices. Others insist that the U.S. government should work with industry groups to identify and support critical technologies. The debate is turbulent, its outcome highly uncertain except in one respect: Whatever happens won't happen fast. And in the world of technology, managers cannot wait.

REPORTER ASSOCIATE *Laurie Kretchmar*



That's why the smartest technology companies aren't holding their breath for the U.S. to sort out its policy. They are taking action right now that will improve their world competitiveness. Here are the most important rules they're following:

■ **GUARD INTELLECTUAL PROPERTY.** A piece of silicon may cost just a few dollars, but the knowledge of how to design and make complex integrated circuits is worth millions. Fighting a theft of intellectual property is difficult, but the payoff can be huge. Japan's patent office in October awarded an enormously valuable semiconductor patent to Texas Instruments after a 30-year battle. Corning in December settled a lawsuit by collecting $25 million from Sumitomo Electric Industries and keeping important optical-fiber patents that Sumitomo was trying to take away. IBM has collected millions in royalties from PC clone makers in Taiwan and South Korea. A relentless fighter for intellectual property rights, IBM has also won well-publicized copyright victories over Fujitsu and Hitachi. Supporting U.S. companies is a federal law that lets them block imports that they claim poach on their intellectual property.

American enterprises have often sold technology to the Japanese only to see it come back and beat them. A safeguard: Define exactly what you are selling. When Japanese giant Matsushita asked Spectra-

The U.S. industry has done no better in many high-tech industries than it has in low- and middle-tech businesses over the past decade—although a number of American executives were betting otherwise.

Milliken, a leading supplier of seat fabric to demanding Japanese automakers, uses a high-tech system to match cloth colors at this plant.

fax, a small company in Naples, Florida, to design a circuitboard that would enable personal computers to send and receive fax messages, Chairman Tom Conwell and President David Rae were determined to keep control of their core technology. After long negotiations, Spectrafax agreed to design a fax board that would be sold under the Panasonic brand. But Spectrafax could develop related products—and is doing so, designing "broadcast" systems for stock firms and other companies that send large numbers of faxes. "You have to avoid selling all your ideas in one fell swoop," says Rae. "You have to make sure the technology you license is also technology you can use and develop."

■ **SEEK TECHNOLOGY EVERYWHERE.** While some 7,000 Japanese study or work at laboratories in the U.S., fewer than 200 American scientists do so in Japan. The Massachusetts Institute of Technology has been trying to correct the imbalance. A program there placed 43 MIT graduates as interns in Japanese labs in 1989. But experts agree Americans need to know far more about what's going on in foreign labs.

Use all your overseas resources to search for technology. Robert Reich, who teaches at Harvard's Kennedy School of Government, suggests that U.S. companies assign sales offices and subsidiaries abroad the job of intelligence gathering, as the Japanese have done for years. Says he: "We are so used to the flow of knowledge from us outward that we have not reoriented ourselves." Some companies recognize Japan as a fertile source of new technology. IBM and Du Pont have large R&D operations there; Eastman Kodak, Texas Instruments, Digital Equipment, and others are scrambling to join them.

Don't forget to look in your own backyard. Small U.S. companies often complain that large American enterprises ignore them. Crystal Semiconductor, a startup manufacturer of analog-to-digital integrated circuits in Austin, Texas, was frustrated in its attempts to find a U.S. source of capital. "American companies gave us the back of their hand," says L. J. Sevin, an investor who is supporting the company and has backed Compaq, Cypress Semiconductor, and other successful ventures. "Our established large corporations have an arteriosclerosis problem." Crystal eventually turned to Japan's Asahi Chemical, which bought a 7% stake for $3.5 million and paid $2 million for licenses.

Listen hard, even if practical use of a technology seems far off. Niels Reimers, director of technology licensing at Stanford University, has spent more than a year trying to interest U.S. companies in a computer storage technique being developed at the university that could put the contents of a compact disk on a surface the size of a fingernail. He concedes that a marketable product is years away but is dismayed by the negative response of many American corporations. A number of major Japanese companies have knocked on his door, eager to acquire licenses.

■ **MAKE ALLIANCES, CAREFULLY.** By now plenty of companies accept that alliances may be the only way to develop cer-

PHOTOGRAPH BY ANN STATES—SABA PRESS

tain complex technologies or expand into some markets. Even IBM is collaborating with Toshiba on flat screens for computers. But companies quite properly worry about their partners learning too much. Motorola trades microprocessor technology to Toshiba for memory-chip-manufacturing techniques, a risky move that gives Japan access to a technology in which the U.S. still leads. Motorola says the deal helps both companies. But senior vice president Hector Ruiz concedes there's always a danger: "The companies we're dealing with are phenomenal competitors. There's always the concern that they will outperform us."

Make a cleareyed assessment of your potential partner's motives. T. J. Rodgers, outspoken president of Cypress Semiconductor, which makes leading-edge semiconductors, has been wary of alliances. He has licensed Matra, a French company, to manufacture and sell certain Cypress products in Europe. But after negotiating with ten Japanese companies over two years, he has not signed with a single partner. Reason: "We concluded that every company we negotiated with was after our technology, would blow us out of the Japanese market, and would come after our U.S. market." Rodgers is building his own sales operation in Tokyo.

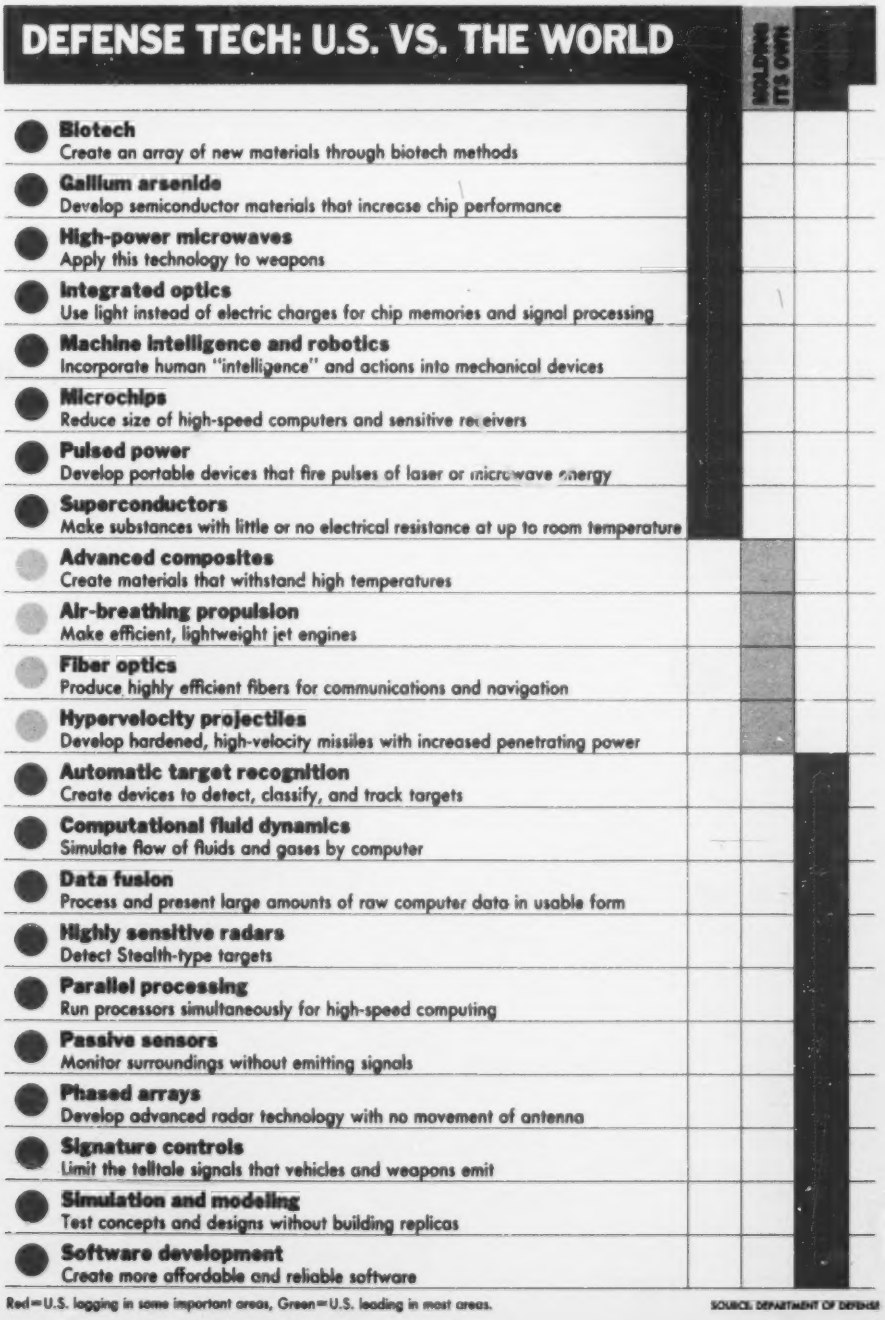
Consortiums can help spread research costs and may give you access to talent. Experts say those that are clearly focused on a specific goal, like Sematech, which is developing advanced chip-manufacturing techniques, are most likely to work. Drumming up interest is another matter. IBM has America's only privately owned synchrotron—a device for creating the most advanced chips—and has invited other companies to use the machine. Exactly one company, Motorola, has signed on. George M. Scalise, president of Maxtor, a manufacturer of hard-disk drives, has been trying to organize a consortium to do R&D on storage technologies. U.S. drive makers lead the world, but Scalise thinks the Japanese are catching up. His U.S. competitors are so caught up in a price war that they haven't paid him much mind.

■ **QUALITY, QUALITY, QUALITY.** Advanced technology won't get far if it isn't turned out with high quality. The Malcolm Baldrige National Quality Award administered by the U.S. Commerce Department signals government's recognition that American companies need a push to match the competition. In November, President Bush handed out awards to the 1989 winners, Xerox and Milliken, the South Carolina textile manufacturer.

While Xerox engineers advanced copier technology, more than 100,000 employees took the company's 30-hour course on quality. Workers are trained to understand how parts they work on will be used and to find out whether workers down the line are satisfied with them. Xerox says it is perhaps the first U.S. company to win market share back from Japanese competitors. Its share of the small-copier market fell from 16.7% in 1979 to 8.6% in 1984 but has since rebounded to 14.6%, according to Dataquest.

Milliken believes it uses computers better than competitors do. A sophisticated system can check fabric colors with high accuracy. Another computer lets designers customize colors and patterns of carpet tiles on a computer screen, send designs di-

DEFENSE TECH: U.S. VS. THE WORLD



Red=U.S. lagging in some important areas, Green=U.S. leading in most areas.

SOURCE: DEPARTMENT OF DEFENSE

BOB MARCHEWKA

Xerox, a 1989 National Quality Award winner, used a team from manufacturing, design, and customer service to create copiers that won back market share from the Japanese.

rectly to a mill, and produce samples almost immediately. Milliken is proud that it has cracked the tight circle of suppliers to Japanese automakers in the U.S., providing almost half their seat material.

■ **FOCUS ON MANUFACTURING.** Too many U.S. companies still assume that technological advance is a matter of brilliant design. That's vital, of course, but not worth much if the design cannot be efficiently manufactured. Taking that fact to heart is not easy. Hewlett-Packard, for example, had a reputation as a designer's paradise. As an executive says, "Manufacturing was just there to turn some of these nifty ideas into products." But when Chief Executive John Young shocked employees by declaring in 1980 that the company would improve quality by a factor of ten, things had to change.

To develop its highly successful lines of ink-jet printers, H-P abandoned its practice of letting designers hand down products. Instead, everyone involved with the products had to help answer the inevitable difficult questions. How much money could they spend to avoid a one-week delay in meeting a target date, or to achieve a 1% increase in sales, or to lower the cost of a part by $1? Suppliers came into the process early to test several methods for making parts. The team set up and ran prototype assembly lines to work out the bugs before going into full production. Result: H-P's inexpensive DeskJet and PaintJet printers have cut deeply into the dot-matrix market dominated by Japanese companies.

Give manufacturing the respect it deserves. When Steve Jobs launched Next Inc., he decided his workstation company would live or die on manufacturing. "I set out to place manufacturing at the highest level of prestige in the company," he says. He created an almost fully automated factory and eliminated all but a half-dozen hourly workers. An engineer can design a circuitboard on his computer, send the specs by modem to the plant, and pick up a *manufactured* board 20 minutes later.

Jobs says the Next factory solders components to circuitboards with a defect rate of 20 parts per million, ten times better than some of the best Japanese operations. He says it is also a recruiting tool for manufacturing engineers: "Once we show them the plant, their minds are blown." For a while Next had more Ph.D.s in manufacturing than in design—a statement not many U.S. companies could make.

Maxtor's Scalise believes U.S. hard-disk makers must join forces to stay ahead.

BOB KOSH

■ **UNIVERSITIES CAN HELP—REALLY.** Many managers think of universities as ivory towers, but academic manufacturing experts are eager to solve real-world problems for companies large and small. Rensselaer Polytechnic Institute in Troy, New York, is one of a growing number that receive state or federal funds to help companies improve manufacturing. The university's Center for Advanced Technology in Automation and Robotics recently consulted with Standard Gauge, an 80-year-old manufacturer of measuring instruments in Poughkeepsie, New York. Ten women there assembled the gauges by putting together 35 to 40 parts by hand. RPI is developing a robot that will produce three subassemblies and double productivity.

Carnegie Mellon's Robotics Institute may sound all ivy and chrome, but it also tackles business problems. "Some of the most interesting technical developments come from close collaboration with industry," explains Mark Fox, director of the institute's center for integrated manufacturing decision systems. Some recent Carnegie Mellon projects: an expert system to help Edgewater Steel, a small manufacturer of rings and wheels just outside Pittsburgh, manage an inventory of 100,000

JOSE A. FERNANDEZ

Spectrafax's Rao and Conwell sold to the Japanese *and* kept their technology.

tools; a hand-held scanner that maps underground pipes for Southern California Gas; and an artificial intelligence program that cuts distribution costs at Digital Equipment by better allocating delivery trucks.

Can America regain its technological lead? Of course it can. World competition in this area is not invincible, just formidable. But regardless of whether the U.S. adopts a technology policy—an issue on which the Bush Administration is divided—the nation will not return to its former technological preeminence unless thousands of individual companies perform better. By following America's best examples, they can start doing this tomorrow. And they had better. ■

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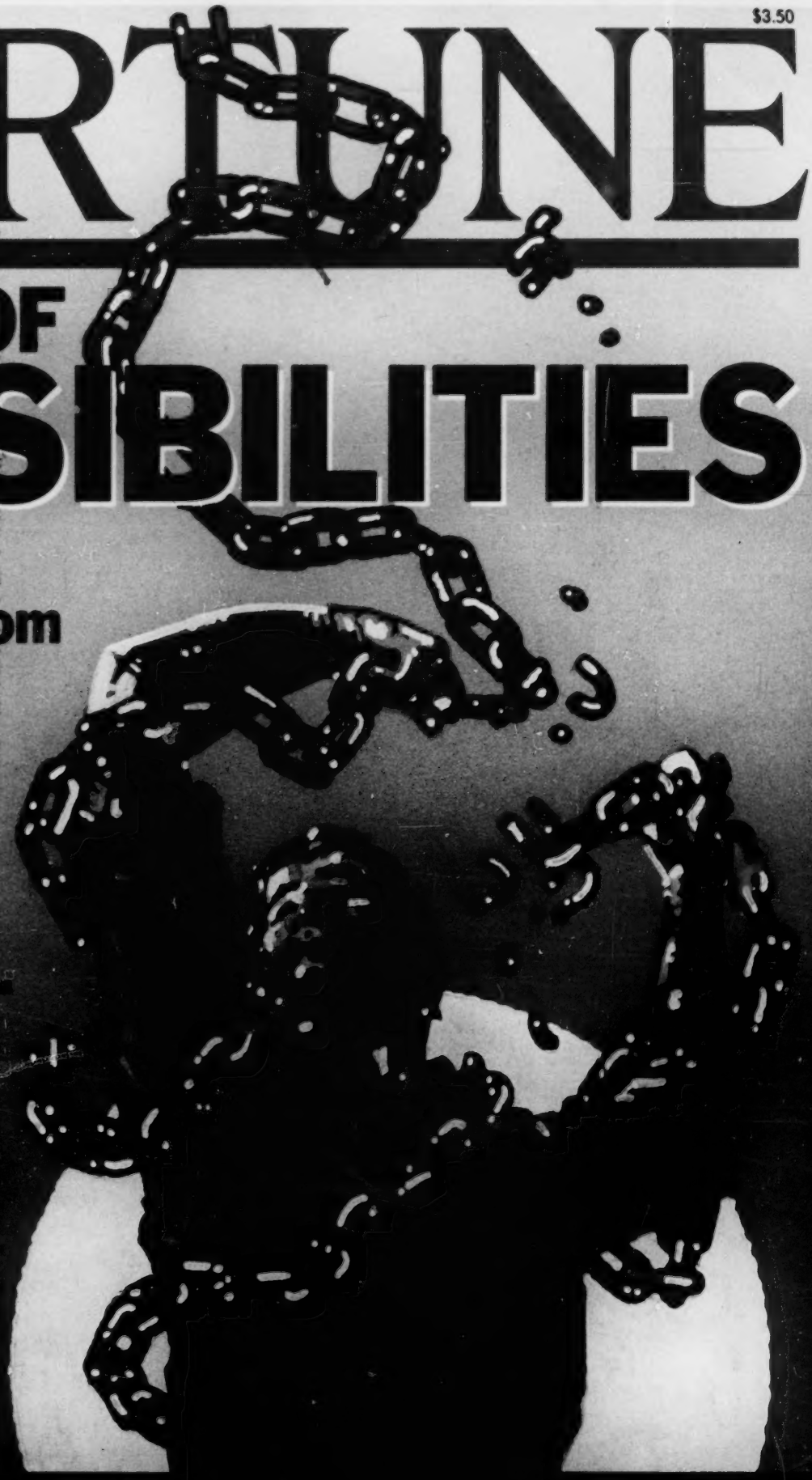
THE ERA OF POSSIBILITIES

The global march of freedom is creating vast opportunities. Seizing them will require new ways of doing business.



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"Gorbachev has permitted people to say that the magical incantations of Marxism-Leninism were nonsense." PAGE 75

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ABOVE: An East German border guard, photographed by Alfred of SIPA, looks westward through a gap in the Berlin Wall.

COVER: Painting by Doug Johnson.

VOL. 121, NO. 2

"The universal homogenous state: liberal democracy combined with easy access to VCRs and stereos."

PAGE 75

"When you get it real frosty and cold, *oohhh*!"

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"One man's greed is another man's incentive."

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"You have to start with the premise that people at all levels want to make the business a success."

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"The Margaret Thatcher of Latin America."

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"I realized you could be snuffed out at any time—so seize the day."

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EDITOR'S DESK

SHONNA VALESKA

Stewart, Kirkland, and Nulty report there is a world to win.

THE END of the cold war gives new meaning to global warming: Everywhere governments are cozying up to free-market ideals. That means FORTUNE's beat—the world that managers inhabit—has grown by a dozen or so nations. Rather than chronicle the historical events yet again, we offer you something we trust you'll find more useful: an examination of their significance for managers. Says senior editor Richard I. Kirkland Jr., architect of the cover package beginning on page 42: "Never in the postwar age has the world business environment seemed so benign and open. We call it the Era of Possibilities."

The new era gives businesspeople more markets and competitors to worry about and little time to do so. Managers will have to survey the globe and stake new ground as swiftly as Eastern Europeans are seizing their freedom. "If you don't cut into an expanding global market, then it could cut into you," says writer Thomas A. Stewart, whose article on page 58 offers advice from stalwarts who have already pioneered business frontiers from Moscow to Manila. Former president and editor-in-chief of Atheneum Publishers, Stewart got an early view of global possibilities at a Frankfurt book fair in West Germany: "Publishers from all over the world would gather to sell books and give each other colds from exotic places."

So contagious is the global bug that industries as varied as telecommunications and tourism are buzzing about prospects. Writer Peter Nulty assembled two dozen of the best thinkers he could find around the U.S. to delineate major trends in the way the world will change. Finally, we give you Francis Fukuyama, whose controversial article "The End of History?" pronounced capitalism triumphant over centralized economies months before the fall of the Wall. He shares new thoughts on the future that should cheer and energize corporate executives.

Though rising foreign markets call for fast action on the part of U.S. managers, don't expect to see instant improvement in the nation's trade picture. Export opportunities will take time to develop, says FORTUNE's chief economist, Todd May Jr., in his 18-month forecast beginning on page 104. He and his colleagues predict very slow growth ahead—though *no* recession—and much higher inflation than most economists. Sounding the lone voice doesn't bother May: "I'd rather be right than run-of-the-mill."

May and his team are known as much for their accuracy as for their contrarian views. They have been remarkably prescient in their predictions of broad business trends, and in five out of the past eight years, they have come closer to predicting real GNP growth than the Blue Chip consensus of 50 of the nation's leading economic forecasters.

Marshall Loeb

MANAGING EDITOR

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Accountants laugh after all; getting whacked at Price Waterhouse.

program, packaged-goods marketing consultant Chris Gilmore brought out a pack of the cards and tossed out one that read "Get out of your box." Accordingly, they looked outside the beer industry for inspiration, finding it at such experienced marketers as PepsiCo and **Campbell Soup**. As a result, Coors targeted Southerners as can lovers and Easterners as lovers of bottles. Says Gilmore: "We not only borrowed some of their ideas, we borrowed some of their people."

Players can use the cards alone or in group brainstorming sessions. Price Waterhouse partner Mark Volker keeps his deck handy in the top left-hand drawer of his desk. At a recent meeting where people were butting heads over how to speed up socialization of new recruits, he played the "Combine ideas" card from memory. Before long, they agreed on some ice-breaking exercises.

The cards, which cost $12.95, are the brainchild of Roger von Oech, 41, a former IBM marketing representative who heads a creativity consulting firm in Menlo Park, California. Von Oech has used some of the imagination-nudging concepts for years in seminars and books. His 1983 *A Whack on the Side of the Head* was a best-seller and was translated into nine languages, including Japanese and Finnish. A revised edition comes out in April. **– Laurie Kretchmar**

FEWER JOBS FOR THE CLASS OF 1990

■ The 1990 college graduate faces one of the tightest job markets in almost a decade. The number of entry-level positions is expected to decline by 13.3%, the steepest drop since recession-plagued 1982 and far greater than the 0.5% decline in the number of people who will graduate. So says a report by Michigan State University's Career Development and Placement Services. Concludes assistant director Patrick Scheetz: "It's going to be a big game of musical chairs, and somebody is surely going to lose out." He blames downsizing in major companies and tougher global competition.

But the news is not all bad. Michigan State surveyed about 500 employers, including such corporations as **General Motors**, **IBM**, and **Hyatt Hotels**, and found that some industries—notably utilities and big oil—will have more openings for college graduates in 1990 than they did in 1989. (See table for a sampling of who's hiring and who isn't.)

Utilities? They expect increased business in the coming decade and need electrical engineers (starting salary, $32,107) and computer scientists ($31,389).

Some oil company recruiters worried that the 1989 oil spill off Alaska by the *Exxon Valdez* would make it tough to find the grads they need. They were wrong. Says Gerald Smith, manager of recruiting at **Mobil**: "We were amazed there were no real repercussions. Our interview schedules have been full." **Exxon** itself will be hiring more people, and a spokesman says there is no shortage of recruits. Oil companies need graduates in chemical engineering ($33,380 to start), chemistry ($25,938), and marketing ($24,100). **– Jacob Park**

"A big game of musical chairs"

WHO'S GOT MORE JOBS	
INDUSTRY	CHANGE FROM '89
Utilities	+29.4%
Petroleum	+22.1%
Publishing	+13.7%
Hotels, restaurants	+ 5.7%

. . . AND WHO's GOT FEWER	
Automakers	-18.6%
Electronics	-24.8%
Government	-20.9%
Aerospace	-20.6%

BUSINESS SCHOOLS: YOUR NAME HERE

■ Graduating MBAs aren't the only ones after big bucks. Business schools want money too, and some are ready to rename themselves after *you*—provided you can meet the asking price. You're too late to get your moniker on New York University's B-school. New York publisher and 1959 alumnus Leonard N. Stern snapped up that opportunity in 1988, paying $30 million for the honor. But there are other current listings, among them:

- The University of Michigan's School of Business Administration wants at least $40 million.
- Columbia University's School of Business is looking for $55 million to $65 million.

Sound steep? Listen to Meyer Feldberg, Columbia's business school dean: "When you name a school at Columbia after someone, you're creating immortality for an individual or a family. A very large gift is appropriate."

The tab for such immortality was particularly high through the 1980s (see table for a sampling). The country's oldest such institution, the Wharton School, was endowed in 1881 by nickel and zinc magnate Joseph Wharton. He bought posterity for a paltry $100,000, a mere $1.6 million in today's dollars. The biggest donor of them all? George F. Baker, a founder of First National Bank of New York (which evolved to become Citicorp). In 1924 he gave $5 million to Harvard's business school, which opened its doors in 1908. Adjusted for inflation, that equals $43.2 million today. Baker gets scant thanks for his generosity, however. Most people call it the Harvard business school even though the Graduate School of Business Administration,

NEW MONIKERS FOR OLD

BUSINESS SCHOOL	NAMED FOR	GIFT in millions	YEAR
New York University	Leonard N. Stern	$30	1988
Cornell University	Samuel Curtis Johnson	$20	1984
University of Minnesota	Curtis L. Carlson	$18	1986
University of California at Berkeley	Walter A. Haas	$15	1989
Brigham Young University	J. Willard and Alice S. Marriott	$15	1988
Washington University	John M. Olin	$15	1988
UCLA	John E. Anderson	$15	1987
University of Rochester	William E. Simon	$15	1986
Wichita State University	W. Frank Barton	$12	1987
Boston College	Wallace E. Carroll	$10	1989
University of Pittsburgh	Joseph M. Katz	$10	1987
Duke University	J. B. Fuqua	$10	1980

The 1980s: boom times for renaming business schools—for a price

George F. Baker Foundation is its full and proper name. Buyer beware. **– R.J.**

THE U.S. AND CHINA: BACK TO BUSINESS?

■ Think U.S. trade with China stopped when the tanks rolled into Tiananmen Square? Think again. American and other foreign executives who evacuated in the wake of last summer's violence are back, and managers from additional U.S. companies have moved into China since then. Five work for **Lockheed**, which has opened an airplane maintenance facility. A **Rockwell International** subsidiary in China has announced plans to set up an industrial automation plant that will have four Americans on the scene.

The newcomers will be joining foreign managers who beat it back to China surprisingly quickly after the events of last summer. IBM's 60 foreign staffers began to return to Beijing and Shanghai to hawk Big Blue's product six weeks after the crackdowns. **Procter & Gamble**, which manufactures Head & Shoulders shampoo in China, sent its six Americans back within a month. **Xerox**'s half-dozen U.S. managers working at the company's printing operation in Beijing left briefly, but only to Shanghai, where the company makes copiers. They returned a week later.

An expatriate manager at Xerox's Shanghai plant, which makes copiers

Despite what might seem like an all-clear, the business outlook still seems chilly for the near future, especially for companies selling consumer products, lending money, or catering to tourists. Politically, however, a thaw might be beginning; see the following story. **– Susan E. Kuhn**

ASIAN HURRAHS FOR BUSH'S CHINA MOVE

■ At home, President Bush came in for all kinds of brickbats for surreptitiously dispatching National Security Adviser Brent Scowcroft to mend fences in Beijing so soon after China's brutal crackdown on student demonstrators. "Severely misguided," pronounced Winston Lord, Reagan's ambassador to China.

In contrast, governments and investors in Asia privately lauded the initiative. Says Gary Klintworth, a China analyst at the Research School of Pacific Studies at Australian National University: "The more China is ostracized, the greater the likelihood that the hard-liners now in power will become even more hard-line."

Bush's overture has already prompted others to ease pressure on China. Japan will invite Chinese officials to visit Tokyo soon. The World Bank said it hopes to resume lending to the PRC. And France has signaled its willingness to help finance a joint venture.

Bush is keeping sanctions on sales of military equipment, but significantly, the U.S. made the first move toward normalizing relations. In response, China has toned down anti-Western rhetoric and could even allow dissident scientist Fang Lizhi, holed up in the U.S. embassy since June, to leave the country. More important issues remain unresolved. Protesters continue to be arrested and martial law remains in force in Beijing. Still, says an executive at a big U.S. electronics firm and for years a close China watcher, "China's leaders understand that Bush has gone out on a limb, that this is a quid pro quo situation, and that they have to give him something for it." **– Ford S. Worthy**

NOW HEAR THIS

■ **JOHN BRYANT,** 42, U.S. Congressman (D-Texas), on the 20% stake a Japanese corporation has bought in La Prairie, a cosmetics company controlled by Georgette Mosbacher, whose husband is Secretary of Commerce:
"It may be her company. But you've basically got the Secretary of Commerce in the position of doing business with the Japanese."

■ **CARLOS MENEM,** 59, President of Argentina, on his country's new free-market policies:
"On this flight, we are all aboard, absolutely everyone, and this plane has no parachutes. Anyone who wants to jump may jump, knowing the consequences."

■ **ALLAN JONES,** a Chicago cabdriver, on how credit cards have led to the overleveraging of consumers:
"People have the spending power, but they have no money."

■DEALS OF THE YEAR • WHAT CONSUMERS WANT NOW • BEST STOCK

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TERRY ALLEN

"It helps you with customers, suppliers, and employees. Your reputation is everything."

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What does it take to get your company rated tops in FORTUNE's reputation survey? Find out from eight winning CEOs, among them a biochemist, a soft-spoken Scot, a tub-thumping Ohioan, and a legendary Omaha investor.

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In a fiercely competitive world, a solid reputation has never been more important. Merck gets the gold for the fourth straight year, but silver medalist Philip Morris gave the champ its closest race yet. *by Sarah Smith*

HOW ALL 305 COMPANIES RANK 66

Peers and industry analysts score them on eight attributes, from ability to build talent to use of assets to corporate citizenship.

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Aging is in, fitness fanaticism is going out, and with casual sex on the wane, people are looking for other kinds of thrills. *by Anne B. Fisher*

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THE BEST AND WORST STOCKS OF 1989 114

There were plenty of good reasons to sit on the sidelines last year—gloomy economic forecasts, a mini-stock market crash, and a growing savings and loan industry crisis. If you ignored them all, you were smart. *by Karen Nickel*

A BANNER YEAR FOR THE WORLD'S MARKETS 118

Spurred on by another year of economic growth and financial liberalization, the bull went globetrotting. Mexico's stock market led the way.

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"On quality I'm a sonofabitch."

PAGE 40

"The Japanese will challenge the traditional market leaders. We're heading for an era of fierce competition."

PAGE 96

"For marketers in the Nineties, home will be where the action is."

PAGE 108

"They don't know anything about stores, and I don't think they suspected how bad the cash position was."

PAGE 121

"There is no clear distinction between economics and politics."

PAGE 129

"I'm going to extend my contract to the year 2010, when I'll be ready to relax."

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THE REICHMANNS' RARE MISSTEP 121

Sometimes the people you get into business with can drag you into trouble. The reclusive billionaire real estate developers, who now control Campeau Corp., find themselves presiding over a debacle and trying to save the company. At stake: a lot of money and their reputation as shrewd dealmakers. *by Kenneth Labich*

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WARY HOPE ON EASTERN EUROPE 125

America's top corporate chiefs are elated by the outbreak of freedom and think it will make the region a promising market. But they worry that change may come too slowly to stave off disillusionment—or so fast that it will bring a backlash from hard-liners. *by Mark Alpert*

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Harvard's young Jeffrey Sachs is pushing Solidarity to take the pain now for a big gain later. It won't take all that long, he promises. The future of market capitalism in the East rides on whether he is right. *by Robert E. Norton*

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Corporate matrimony and the RJR buyout led to new records in the size of mergers—and the matchmakers' fees. Then suddenly the LBO party fizzled. With fewer raiders lurking, U.S. corporations have a unique opportunity to make more smart deals. *by Christopher Knowlton*

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EDITOR'S DESK

JAMES LUKOSKI (2)

Editor John Curran (left) and reporter Karen Nickel, against one of capitalism's best backdrops

THE ROMAN GOD JANUS—famed for being able to look ahead and backwards simultaneously—had nothing on John Curran. As senior financial writer and editor of our Personal Investing department, Curran usually keeps his gaze fixed on the horizon, the better to spy promising stocks and steer readers away from the occasional Bermuda Triangle. It was Curran who told readers in 1984, when the Dow was at 1200, that it might well climb above 2000 by 1987. It was he again, in August 1987, who advised readers to start unloading stocks—almost two months before the October crash. And when others were direly forecasting that the Tokyo stock market was heading for collapse, Curran wrote that it would stay up in the heights. For that prescient analysis, he won last year's Overseas Press Club Award for the best business reporting from abroad.

In this issue Curran edited two stories that take an unaccustomed look back, to the biggest deals and most incendiary stocks of the past year, searching for clues to forces that may shape markets of the 1990s and beyond. Of "Deals of the Year," for instance, he says, "We take all of the huge and varied corporate transactions, no matter how complicated, and bring them together in a comprehensive overview—looking beyond the headlines for trends that might not be apparent at first glance."

Reporter Karen Nickel, whose article on 1989's best-performing stocks (and stock markets) begins on page 114, has a personal understanding of one such trend: the growing importance of international exchanges. "I grew up in a globally minded family," she explains. "My father is a ship's captain. Right now he's commanding the *Argonaut*, a container ship bound for New York." As a student, she studied philosophy at Universität Bamberg in West Germany for a year.

At first Nickel was surprised to see that Austria's stock market was the strongest performer of any in Europe in 1989. She quickly identified the reason: "Traditionally the Austrians played a minor role—middlemen to the Eastern bloc. But now the opening of Eastern Europe has sent them flying."

Writer Robert Norton believes Poland's bold experiment with capitalism will be a bellwether for struggling economies elsewhere in Eastern Europe. While profiling Harvard economist Jeffrey Sachs, a midwife to Polish capitalism, Norton was amused to find free-market forces already working in Warsaw. "Every cab driver not only knows the exact, up-to-the-hour exchange rate," Norton reports, "but is also completely conversant with the concept of bid and ask."

Marshall Loeb

MANAGING EDITOR

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LEADERS OF THE MOST ADMIRED

What does it take to get rated tops in FORTUNE's latest reputations survey? Let a biochemist, a soft-spoken Scot, a tub-thumping Ohioan, and a legendary investor from Omaha show the way.

HOW DO YOU *build a winning reputation? In* FORTUNE*'s annual survey, the foundations are the eight attributes listed on the opposite page. To rise to the top, a company must rate highly in each, in the judgment of peers and the analysts who follow its industry. Merck, this year's No. 1, took first prize in four categories. Runner-up Philip Morris won in two.*

The stories that follow take a closer look at those eight building-blocks of reputation. To probe the widest range of industries, we have in four cases examined companies that ranked second behind either Merck or Philip Morris in a key attribute. The corporations profiled appear in the order they fall in our overall ranking, starting with No. 1 Merck and winding up with No. 16 Berkshire Hathaway.

For an overview of America's most admired corporations, including the top and bottom ten, see page 58. A list of all 305 companies and their scores begins on page 66. Tables showing how they rank in 32 separate industries start on page 72. And for a look at how the most admired got that way, read on.

ABILITY TO BUILD TALENT

■ "There are plenty of good people around, but I wouldn't send them to Merck," says Virgil Baldi, vice president of the Korn/Ferry International executive recruiting firm. "I send Merck only people with world-class reputations." Merck's chairman, Roy Vagelos, 60, a physician and biochemist, has been passionate about attracting great minds since he became research chief in 1976. When Merck hit a new-product drought in the early 1980s, he recruited hundreds of research scientists to reignite the company's labs.

Vagelos does not rely solely on search firms. He acts as his own chief talent scout as he travels the world, and makes a special point of firing up interest in Merck on college campuses. "I discuss the discovery of new drugs, and that is very exciting to young scientists," he says. Merck has introduced a remarkable ten major drugs since 1981; each accounts for at least $100 million in annual sales. Among them: Mevacor, which cuts cholesterol levels as much as 40%, and Primaxin, a powerful antibiotic.

Vagelos expects the stars he hires to pull in other stars. He often greets his managers with: "Who have you recruited lately?" Dr. W. John Powell, vice president for clinical research, boasts that he recently enticed Merck's new head of infectious diseases away from Yale medical school. "Merck has some people of higher quality than you can find at the best academic institutions," says Powell, a cardiologist who taught at Harvard for 21 years before joining the company in 1986. "Research universities of the caliber of Harvard and MIT are trying hard to get our top scientists back."

It won't be easy. Unlike often strapped academic labs, research facilities at the company's headquarters in Rahway, New Jersey, are lavishly equipped. Merck plows more dollars into R&D than almost any other pharmaceutical company. In 1989, R&D expenditures were some $755 million, or about 11% of sales. Says Dr. Paul Friedman, yet another transplanted academic: "My sense of accomplishment is far greater in this setting than when I was at Harvard. My basic research is immediately applied to developing medicines." There are also fewer distractions at Merck. For

Merck's CEO Roy Vagelos likes to skip several rungs on the ladder when he promotes employees.

LOUIS PSIHOYOS—MATRIX

THE EIGHT KEY ATTRIBUTES OF REPUTATION

ABILITY TO ATTRACT, DEVELOP, AND KEEP TALENTED PEOPLE

MOST ADMIRED	SCORE
Merck	8.89
Philip Morris	8.82
3M	8.21
LEAST ADMIRED	**SCORE**
Gibraltar Financial	1.96
Wang Laboratories	2.66
Control Data	3.26

VALUE AS LONG-TERM INVESTMENT

MOST ADMIRED	SCORE
Philip Morris	9.42
Merck	8.93
Berkshire Hathaway	8.45
LEAST ADMIRED	**SCORE**
Gibraltar Financial	1.35
Wang Laboratories	2.09
Control Data	2.60

QUALITY OF PRODUCTS OR SERVICES

MOST ADMIRED	SCORE
Merck	9.18
Rubbermaid	8.99
Philip Morris	8.96
LEAST ADMIRED	**SCORE**
Gibraltar Financial	3.75
Texas Air	4.15
Wang Laboratories	4.23

INNOVATIVENESS

MOST ADMIRED	SCORE
Merck	9.06
3M	8.53
Rubbermaid	8.47
LEAST ADMIRED	**SCORE**
Gibraltar Financial	2.91
Control Data	3.66
Unisys	3.95

QUALITY OF MANAGEMENT

MOST ADMIRED	SCORE
Philip Morris	9.57
Wal-Mart	9.17
Merck	9.11
LEAST ADMIRED	**SCORE**
Gibraltar Financial	1.99
Wang Laboratories	2.72
Control Data	3.45

FINANCIAL SOUNDNESS

MOST ADMIRED	SCORE
Merck	9.28
Coca-Cola	9.05
IBM	8.85
LEAST ADMIRED	**SCORE**
Gibraltar Financial	1.23
Wang Laboratories	1.59
LTV	2.35

COMMUNITY AND ENVIRONMENTAL RESPONSIBILITY

MOST ADMIRED	SCORE
Johnson & Johnson	8.23
Merck	8.19
Du Pont	7.99
LEAST ADMIRED	**SCORE**
Gibraltar Financial	3.32
Texas Air	3.53
LTV	4.16

USE OF CORPORATE ASSETS

MOST ADMIRED	SCORE
Berkshire Hathaway	8.52
Merck	8.50
Wal-Mart	8.38
LEAST ADMIRED	**SCORE**
Gibraltar Financial	1.63
Wang Laboratories	2.57
Meritor Financial Group	3.04

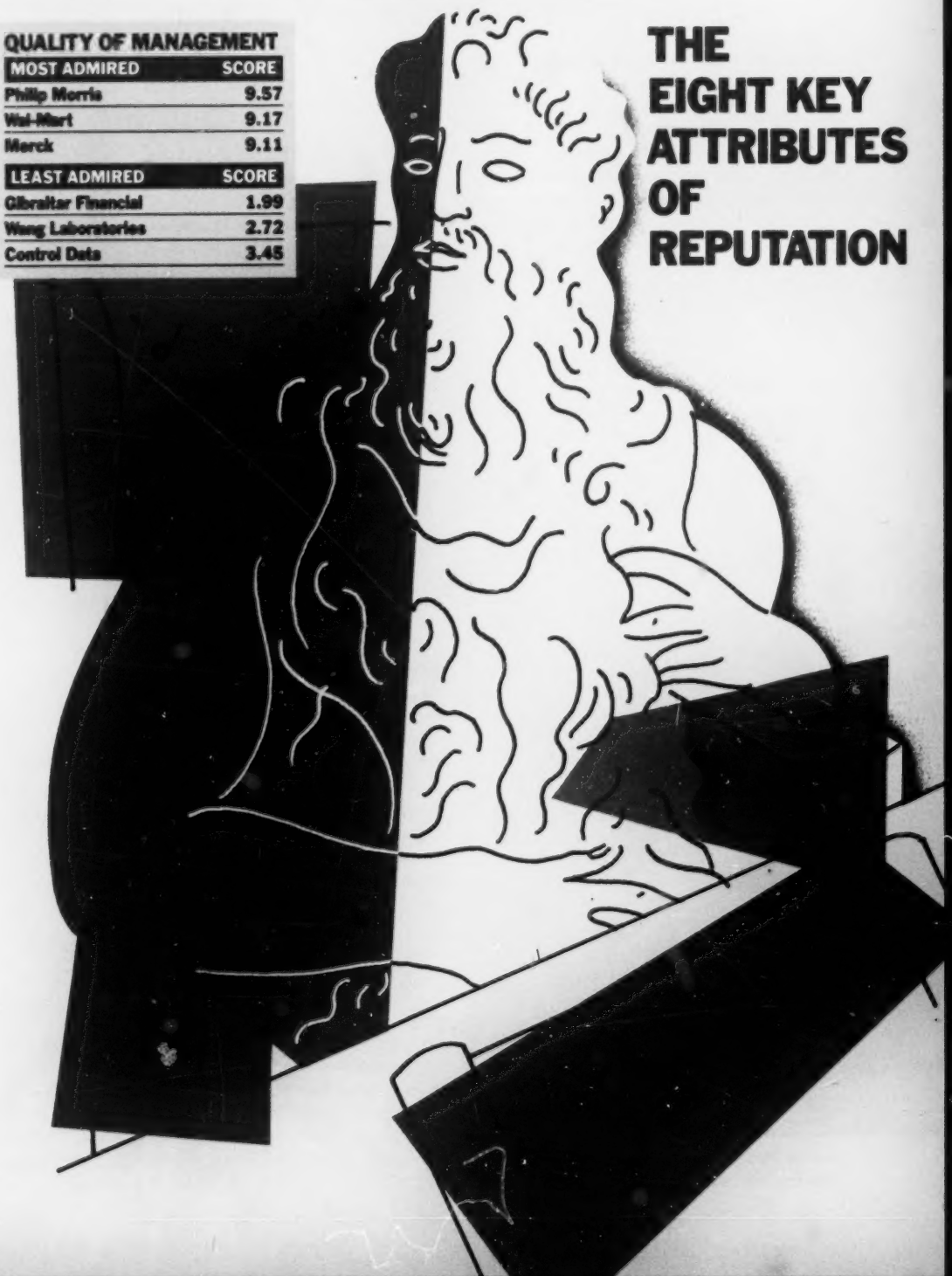


ILLUSTRATION BY TERRY ALLEN

one thing, scientists don't have to campaign for federal and foundation research grants as they do at most universities.

Vagelos allows his stars a lot of freedom. He tolerates and even encourages extracurricular projects: Dr. Donald J. Hupe, for example, spends about 15% of his time working with the National Cancer Institute on potential anticancer drugs. Other staffers contribute time to high schools and colleges to help students grasp the importance of science and math. "We think it is vital to make the U.S. competitive in technical fields," says Vagelos.

One hallmark that particularly endears him to employees is his penchant for promoting them quickly, sometimes skipping several rungs on the ladder. Says Vagelos: "Developing people as fast as possible is the way to have a vibrant and exciting organization." **– Faye Rice**

VALUE AS AN INVESTMENT

■ At first it may seem odd that Philip Morris should rank so high among America's most admired corporations. The Surgeon General reports that one-sixth of all deaths in the U.S. are from cigarette-related ailments, and Philip Morris is by far the leading cigarette producer. But in two years the company has risen from No. 7 in our survey to No. 2, largely by giving shareholders exactly what they want: an outstanding return, year after year after year.

Measured by its value as a long-term investment, Philip Morris ranks No. 1 in the survey. That's particularly impressive, since for much of the decade, tobacco company shares have traded at a lower price to earnings multiple than the average share on the New York Stock Exchange. Says CEO Hamish Maxwell, 63, a soft-spoken and charming Scot: "We have been correcting for that, to some extent, by having better than average earnings growth."

And how! During the 1980s, Philip Morris produced annual increases in earnings per share of roughly 20%. By comparison, stalwarts of similar size such as IBM and Ford had gains averaging less than 7% and 16%, respectively.

True, it is easier to sell smokes than cars or computers. Because most customers find the habit hard to kick, they tend not to resist price increases that outpace inflation. During the past decade, that allowed tobacco industry sales to grow and margins to fatten despite 2% annual declines in cigarette consumption. By increasing its market share from 28% to 40%, Philip Morris gathered more of these riches than anyone else.

Now the company, which acquired the Kraft food giant in late 1988, is working wonders in another business. Last year Maxwell goaded executives at his foods unit to raise profits 30%, mainly by cutting costs. In the previous five years Kraft had produced average earnings gains of only 12%. Wall Street expressed its approval—both of those results and of Philip Morris's new, healthier source of earnings—by bidding up the price of its stock 63% during the year, to a recent $41.50 per share. With that kicker, the company's ten-year total return to investors averaged just over 30% a year—tops among the 305 companies in our survey.

Chief executive since 1984, Maxwell is proud that Philip Morris's managers are not your everyday gaggle of MBAs. Several key executives don't even have college degrees. Some, like the boss himself, are immigrants. "By and large, they have to try a little harder," says Maxwell. If Philip Morris's success has a secret ingredient, that just might be it. **– Stratford P. Sherman**

MICHAEL O'BRIEN

Hamish Maxwell of Philip Morris has pushed his troops to raise earnings per share 20% a year.

LOUIS PSHOYOS - MATRIX

Gault of Rubbermaid gets "livid" about product defects.

QUALITY OF PRODUCTS

■ Don't expect Stanley C. Gault to find it unusual that a maker of plastic household items like toys and ice cube trays could win a reputation for some of the best-made products in the U.S. Hint that plastics were once synonymous with junk, and the chairman of Rubbermaid will launch into an energetic speech on the virtues of his polyethylene and the intricacies of his injection molding.

It is a tub-thumper of a speech—literally. Gault, a vigorous 64, will whomp one of his enormously popular garbage cans and invite you to do the same to a flimsier competing version that stands nearby. "Feel that!" he says. "Look at that," shifting his scorn to a limp Brand X laundry basket and then to a knockoff food storage bin with an (ugh!) crooked label. "On quality I'm a sonofabitch."

Ten years ago Gault was one of six top General Electric managers in the running to become the next CEO. When he sensed he wouldn't get the job, he quit and went to Rubbermaid in Wooster, Ohio, the town where he grew up. In three years the new boss reshuffled, fired, and hired so many executives that only two of 172 key Rubber-

maid managers still held their original jobs. But he transformed what was once a modestly successful company into a superstar. Since 1980 sales have quadrupled and earnings have risen eightfold. Rubbermaid is third this year in overall reputation (it has been among the top seven companies for the past five years) and ranks second, after Merck, for the quality of its products.

Solid manufacturing only partly explains that positive perception. Just as important are providing superb customer service and designing attractive, useful gadgets. Gault, whose true passion is marketing, pays as much attention to how even simple products look and work as he does to the ultraviolet inhibitors in their resins. Sales of big garbage cans jumped 20% when he told engineers to whip some up in a specific shade of blue, instead of the ordinary brown. To make housewares look attractive on dealers' shelves, Rubbermaid adds antistatic chemicals to the plastic so products won't attract dust.

Gault never stops acting as his company's No. 1 quality controller. In 1986 he was walking in Manhattan when he overheard a doorman muttering and swearing as he swept dirt into a Rubbermaid dustpan. "Stan whirled around and started grilling the man on why he was unhappy," recalls treasurer Richard Gates. Gault came away persuaded that the lip where the dustpan meets the floor was too thick, leaving a line of dirt, and told engineers to redesign the product.

He is precise and methodical. Gault still visits several stores a week to see how Rubbermaid products are displayed and to inspect the quality of workmanship. "My wife has come to accept that I will never pass a hardware store without going in," he says. If he finds an ill-fitting lid or wrinkled label, Gault buys up the offending goods and then summons his senior managers to attend a vigorous lecture. "He gets livid about defects," says Walter W. Williams, the chief operating officer.

But ultimately it's Gault's infectious pride in Rubbermaid's products, rather than fear of his wrath, that motivates the troops. When it comes to encouraging quality, passion at the top counts as much as engineering precision at the bottom.

– Brian O'Reilly

ABILITY TO INNOVATE

■ Ever since those long afternoons spent tinkering with his junior chemistry set in the basement of his parents' Sioux City, Iowa, home, Allen "Jake" Jacobson has had a hankering for innovation. It shows. During his four years as CEO, the 3M corporation has pumped out new products at a rate of about 200 a year. Many are modest variations of such ordinary but ubiquitous industrial and consumer items as masking tape or sandpaper. But 3M is also a leading maker of high-tech medical diagnostic equipment and computer imaging systems.

Among U.S. companies only Merck is rated as more innovative than 3M in this year's survey. Naturally, being inventive earns the company something beyond praise. Since last January, 3M's stock has risen 29%.

3M functions as a kind of corporate petri dish that fosters the spirit of innovation in its scientists and engineers. Technical people are encouraged to swap information and ideas in the halls. Once a year the company holds its own private trade show. Each of its more than 115 research labs sets up a booth displaying the latest technologies, and for three days scientists, like hucksters at a fair, try to "sell" their work to each other.

A corporate committee of 3M scientists oversees all research, making sure there is no duplication and cross-pollinating new ideas among divisions. Jacobson gives technical people all the resources they need. In 1988, 3M spent 6.5% of sales, or $689 million, on R&D, twice the average of U.S. industry.

AT 3M, RESEARCHERS SPEND 15% OF THEIR TIME ON PROJECTS THAT WILL PAY OFF ONLY FAR DOWN THE ROAD.

Jacobson believes that top managers go astray if they try to impose too much of their own thinking. Says he: "You've got to sponsor your people's ideas. You've get to help them along." At 3M researchers are encouraged to spend 15% of their time pursuing projects that will pay off only far down the road. But that carrot hides a stick: Jacobson also insists that 25% of each division's annual sales come from products developed in the prior five years.

The company holds scientists and engineers in particularly high esteem. The lab-coat crowd accounts for half of 3M's 135 general managers. A two-tier promotion system allows inventors who don't want to manage to rise to the equivalent of vice president—pay, perks, and all.

Jacobson, 63, a chemical engineer, pushes his researchers to put customers first. "Innovation works from understanding consumer needs," he says. A few notable failures overseas—one was a tape gun that the Japanese wouldn't use because it was shaped like a weapon—have taught him to pay more attention to those who are closest to local markets. That's why he's glad that in the past decade 3M has doubled the number of scientists and researchers working abroad to 2,000. *continued*

LOUIS PSHOYOS—MATRIX

Inside CEO Allen Jacobson: A new 3M product made that image.

He believes that if 3M and other American corporations are to keep their innovative edge, the country will have to produce more engineers. Says the father of three: "It has to start in the second grade. Unless you make a home environment where a child can get interested in math and science, you'll never get anywhere." – **Brian Dumaine**

QUALITY OF MANAGEMENT

■ In the sluggish retailing industry, Wal-Mart Stores stands out as one of the few players with any adrenaline. Its first stadium-size store opened in the Arkansas boondocks just 27 years ago. Today Wal-Mart's profits as a percent of sales are already higher than those of its largest competitors, Sears and K mart. Revenues, which topped $25 billion in 1989, may well outstrip both by 1995.

Since Wal-Mart made its debut among America's ten most admired in 1988, it has continued to bushwack the competition. This year the company places second only to Philip Morris for quality of management, the trait our judges deem the most important factor in shaping reputation. But don't give billionaire Sam Walton, Wal-Mart's charismatic founder, all the credit. That lofty ranking is also a tribute to the man he designated as his successor two years ago, David Glass, 55.

To some outsiders, CEO Glass looks almost invisible. But that may be because this 13-year Wal-Mart veteran sees no reason to fix what ain't broke. Says security analyst Margaret Gilliam of First Boston: "One of the things that makes David so brilliant is that he never questions the principles laid down by Sam."

In matters of style Glass is no Walton clone. While Sam drives a pickup and is a fanatical hunter, this quiet, intense Missourian sticks to his four-year-old Mercury station wagon and unwinds by working out in a corporate fitness center. But as a manager, Glass, like Walton, relies on the 1980s mantra, participation. "We have no superstars at Wal-Mart," he says. "We have average people operating in an environment that encourages everyone to perform way above average."

BOB KENNONTH

Wal-Mart's chief David Glass believes in that management mantra of the Eighties, participation.

> "AT WAL-MART, OUR PHILOSOPHY IS THAT THE BEST IDEAS COME FROM PEOPLE ON THE FIRING LINE," SAYS GLASS.

To stay in touch with employees—or "associates," as they're known in Wal-Martese—Glass and his lieutenants at the company's out-of-the-way headquarters in Bentonville, Arkansas, rely on a communications network worthy of the Pentagon. It includes everything from a six-channel satellite system to a private air force of 11 planes, mostly turboprops. Says Glass: "We believe nothing constructive happens in Bentonville. Our grass-roots philosophy is that the best ideas come from people on the firing line." Glass himself spends several days a week visiting the stores.

To heighten associates' sense of mission, the new boss hands them plenty of responsibility. Glass, who pushed Walton to install computers in every store in the mid-1970s, expects managers for each of the 34 departments within a typical Wal-Mart to run their operations as if they were running their own businesses. The managers are supported with detailed financial statements that show costs and profit margins. Says Glass: "Instead of having one entrepreneur who founded the business, we have got 250,000 entrepreneurs out there running their part of the business."

Having peppered the South and Midwest with stores, Wal-Mart is slowly invading the Northeast. Glass promises, "We will continue to push the perimeters." Just as Sherman did through Georgia, no doubt.– **Sarah Smith**

FINANCIAL SOUNDNESS

■ If you think smart marketing is the key ingredient in Coca-Cola's sparkling performance, think again. The most noteworthy change under Chairman Roberto C. Goizueta has been a shift in focus from boosting sales to maximizing shareholder returns. While President Donald Keough maps out marketing moves, Goizueta, 58, says that he wrestles over how to improve value and financial stability "from the time I get up in the morning to the time I go to bed. I even think about it when I'm shaving. But I use an electric razor, so I think I'm safe."

So do FORTUNE's judges. This year they rated Coke second only to Merck for its financial soundness. A Cuban-born chemical engineer, Goizueta has boosted return on shareholders' equity from 21% in 1981—the year he took charge—to an estimated 32% in 1989. One impressed shareholder is investor extraordinaire Warren Buffett, who recently spent about $1 billion acquiring nearly 7% of Coke's stock. Says Buffett: "There is no more heartfelt compliment than when I sign a check."

CEO Goizueta's winning formula: Lower Coke's dividend payout ratio from 60% in 1981 to 41% and vigorously use that savings to buy equity positions in independent

bottlers. These investments—almost $1 billion in 1989 alone—benefit shareholders because Coke increases sales and attacks bottling inefficiencies. Goizueta certainly has not weighed Coke down with debt. The company ended 1989 with some $400 million in long-term debt, a mere 10% of capitalization.

Even that may seem excessive to some old hands: Remember, this is a company that never borrowed a cent until 1980, when it spent $100 million building a new campuslike headquarters in Atlanta. But while he professes greater boldness—Goizueta says he would be willing to increase debt to 35% of total capital—his actions suggest he remains about as devout a worshiper of clean balance sheets as his predecessors. In nine years as chief, he has lifted year-end debt as high as 20% just once.

As a result Coke today sits on some $2.7 billion in cash, including $1.1 billion in proceeds from its recent sale to Sony of a 49% interest in Columbia Pictures Entertainment. Goizueta likes it that way. Says he: "You never know when opportunity will knock." Meanwhile, he plans to spend some of that spare cash on new international bottling joint ventures. Why? "Why did Willie Sutton rob banks?" he says. "That's where the money is."

Goizueta is frugal in his personal life as well. For over 20 years he and his wife, Olguita, lived in the same house that he had bought as a middle manager. They moved to a larger but still modest new home in 1988 to accommodate their six grandchildren, who visit often.

Owning a sugar refinery had made Goizueta's parents wealthy, but the family lost everything when Fidel Castro seized power in 1959. Goizueta fled to Miami the next year with a job at Coke and little else. His considerable fortune—some $80 million—is based entirely on options and shares he earned at Coke, few of which have been sold. The first shares Goizueta ever bought are still parked in the same New York bank where he opened an account 36 years ago.

To ensure that Coke's operations managers think like the top brass about the cost of the money, Goizueta insists they use a calculation he calls "economic value added." He defines that as after-tax operating profits minus the cost of capital employed to produce those earnings. In recent years each of Coke's 19 division presidents has had to present annual three-year projections of the "economic value" he expects to add to the corporation. Says Goizueta: "Adding economic value to the company is the key to rewarding shareholders in the 1990s." **– Patricia Sellers**

LOUIS PSIHOYOS—MATRIX

Roberto Goizueta of Coke prefers to operate with a large cushion of cash.

CORPORATE CITIZENSHIP

■ CEO Ralph Larsen likes to tell the troops at Johnson & Johnson about his time as a trainee in one of the company's baby-shampoo factories. One morning he attended a meeting where managers argued over whether to ship a large batch of shampoo that was safe but didn't meet J&J's "no tears" standard. The decision: Take the loss.

That kind of dedication to customer and community service hasn't kept Wall Street from weeping with joy: Over the past year J&J's stock has risen nearly 40%. And it *has* won the medical products company top honors for community and environmental responsibility in this year's survey. Says Larsen, who became chief last April: "If we keep trying to do what's right, at the end of the day we believe the marketplace will reward us."

The key to understanding J&J's unusual corporate culture is the Credo, a 44-year-old, 309-word statement created by Robert Wood Johnson, son of the founder. The Credo stresses honesty, integrity, and putting people before profits—phrases common to most such documents. What's unusual is the amount of energy J&J's high executives devote to ensuring that employees live by those words. Every few years, in a kind of conference of bishops, the company gathers senior managers to debate the Credo's contents, a process meant to keep its ideals fresh. On his globe-trotting tours Larsen never fails to mention the document. "I tell employees they have to be prepared to take the short hit," he says. "In the end, they'll prosper."

As an example, Larsen cites the tragic Tylenol case in which eight people died from swallowing poisoned capsules. Although J&J believed someone altered the pill in the stores, not the factory, it recalled all its product and quickly lost $240 million in earnings. That swift action persuaded consumers to stay loyal, and today Tylenol remains the nation's leading brand of painkiller.

When he talks about the credo, Larsen comes off a bit like actor Pat O'Brien playing Knute Rockne: He has the same hefty build, bald head, and wildly enthusiastic eyes. The son of a Brooklyn electrician and a Hofstra graduate, Larsen is currently reading William Manchester's biography of Winston Churchill, *The Last Lion*. Not surprisingly, he admires the British statesman for "his ability to do what's right under adversity."

Larsen maintains J&J is doing just that in South Africa. Despite constant pressure to divest, J&J has refused to budge, arguing it can do more good by staying put. The company finances housing for many of its 1,400 employees, most of them black, and helps

Ralph Larsen of Johnson & Johnson believes the market rewards those who "do what's right."

build schools and hospitals in the townships. When Larsen visited there a few months ago, he told the government that he abhorred apartheid, but he insists, "We'll stay as long as we can be a force for peaceful change."

J&J extends similar generosity to employees at home; it's opening a new day-care center for them this year. Such largess draws criticism, even within the company. But Larsen is sticking to his golden rule. "The Credo shouldn't be viewed as some kind of social welfare program," he says. "It's just plain good business." **-B.D.**

USE OF CORPORATE ASSETS

■ At age 11, Warren Buffett made his first investment, three shares of Cities Service preferred. Forty-eight years later—and several billion dollars richer—the man from Omaha runs one of the most successful conglomerates ever. Since 1964 the per share book value of Berkshire Hathaway, which he controls with a 42% stake, has grown from $19.46 to about $4,300—a rate of 23.7% compounded annually. Last year alone, its net worth rose by $1.5 billion, or 45%. In February, Standard & Poor's gave Berkshire its AAA rating. And now the company has collared a new honor: In its first year in our survey, Berkshire wins first prize for wise use of corporate assets. (Classified previously as a service company, it was too small to be included.)

Though it is considered a publisher according to the government categories that FORTUNE uses, Buffett has no doubts about his real line of work. "I'm in the capital allocation business," he says. "My job is to figure out which business to invest in, with whom, and at what price." Buffett approaches that task with a flexibility most CEOs lack. "I'm not like a steel executive who can think only about how to invest best in steel," he says. "I've got a bigger canvas, simply because I have spent my life looking at companies, starting with Abbott Labs and going through to Zenith."

Even today, Buffett still searches for investments by browsing through *Value Line* from A to Z every week. He also reads "hundreds and hundreds of annual reports," as well as plenty of business magazines and newspapers, and he much prefers such solitary research to having hot tips delivered in person. Says Buffett: "It's easier to throw away magazines than throw somebody out of my office."

Ever the maverick, Buffett became a disciple of the late Benjamin Graham's investment theories long before they were fashionable. He still hews to Graham's advice to ignore the financial market's ups and downs and only buy shares in companies whose intrinsic value is higher than their stock price. Each of Berkshire's operating companies is an easily understood gem producing returns on equity capital averaging about 67%. Buffett refers to them as "the Sainted Seven," and they are: See's Candies, Nebraska Furniture Mart, Buffalo *News*, World Book Encyclopedia, vacuum cleaner maker Kirby, manufacturer Scott Fetzer, and uniform maker Fechheimer Brothers. In addition, Berkshire has rich stock investments in a number of corporations, which Buffett judges on the same criteria as the companies he buys outright. Among them are Capital Cities/ABC, Geico, Washington Post Co., and Coca-Cola.

In an era of Trump-size egos and hostility, Buffett is low key and friendly. He is seen as so benevolent that Wall Street has dubbed him a "white squire." This impeccable reputation has recently helped him get some very good deals. CEOs eager to avoid hostile takeovers have taken to offering Buffett convertible preferred stock with a high dividend, confident that he will never mount a hostile raid. Last year Buffett bought such shares in USAir Group, Gillette, and Champion International and took a seat on the Gillette board.

He continues to make a lot of investors rich. How rich? Well, in November 1988, Berkshire moved from the Nasdaq market to the New York exchange. The shares began 1989 at about $4,700, and by the end of the year the stock had climbed nearly 85%, to $8,675. Now eat your hearts out: An estimated 80% of the stock is held by owners who paid less than $100 per share. **-S.S.**

Nobody has a better reputation for allocating capital than Berkshire Hathaway's Warren Buffett.

AMERICA'S MOST ADMIRED CORPORATIONS

Merck gets the gold in our reputations Olympiad for the fourth straight year. But watch out for silver medalist Philip Morris, which gave the champ its closest race yet. ■ *by Sarah Smith*

THE GREEKS had a word for it: *eudoxia*—reputation. Shakespeare's Iago called it "the immortal part of myself." To his Richard II, it was "the purest treasure mortal times afford." Today's managers may put it more prosaically, but they know that in a fiercely competitive world where news spreads—and views can change—on a nanosecond's notice, a solid reputation has never been more important. Says David Glass, CEO of Wal-Mart Stores: "It helps you with customers, suppliers, and employees. Your reputation is everything and should be protected at any cost."

No company has nurtured this invaluable asset better than Merck. For the fourth straight year, the New Jersey pharmaceuticals giant scored highest among the 305 major corporations in our annual poll of nearly 8,000 executives, directors, and financial analysts. But the competition is getting tougher. Rated on a scale of 0 to 10 in each of eight categories, Merck averaged 8.90 this year. It earned top honors by four measures, including quality of products and soundness of financial position. Two of the other categories were won by silver medalist Philip Morris, which scored 8.78 overall. Never during Merck's reign as champ has its lead been so narrow.

Several other corporations gained considerable ground in the view of executives and other experts, all of whom rated companies within their own industries. By pressing ahead with the most radical restructuring in its recent history, Procter & Gamble shed its image as the corporate Kremlin and leaped nine places to No. 4. Du Pont joined the first team for the first time, moving from No. 15 a year ago to No. 10. PepsiCo rose a notch to tie the retailing wizards at Wal-Mart for the No. 6 spot. Pepsi was joined in the top ten by Coca-Cola and Anheuser-Busch—an unprecedented trifecta for the three biggest U.S. beverage companies and a tribute to their ability to gain global market share without choking off profit growth.

Inevitably, some slipped. Boeing, which suffered a six-week strike, dipped to No. 11 from No. 8. Furniture maker Herman Miller, hammered by a slump in spending on office refurbishing, dropped 24 places to No. 33. Big Oil also looked smaller. Shell Oil slipped four places to No. 14. Exxon, wounded by the disastrous Alaskan oil spill, plummeted from the sixth spot to No. 110.

What does it take to win—and keep—a top reputation? For one thing, consistently spectacular profit growth. Merck's earnings per share have risen at least 25% for 14 consecutive quarters. On revenues over five times larger than Merck's, Philip Morris routinely logs 20% annual increases in earnings per share. Rubbermaid, which occupies the No. 3 spot and is a perennial star of this survey, has met or surpassed CEO Stanley Gault's goal of 15% annual

HOW IT WAS DONE

■ Our eighth annual Corporate Reputations Survey covers 305 companies in the 32 industry groups that appeared in last year's FORTUNE 500 and FORTUNE Service 500. We polled more than 8,000 high executives, outside directors, and financial analysts and asked them to rate the ten largest companies in their own industry (a shorter list in some cases) on eight attributes, using a scale of 0 (poor) to 10 (excellent). The attributes were quality of management; quality of products or services; innovativeness; long-term investment value; financial soundness; ability to attract, develop, and keep talented people; community and environmental responsibility; and use of corporate assets.

Companies are assigned to an industry group according to the business that contributed most to their 1988 sales. All of the corporations that appear on FORTUNE's reputations list make public filings of their key financial information.

ILLUSTRATIONS BY TERRY ALLEN

AT THE TOP & BOTTOM OF THE 305 COMPANIES

THE MOST ADMIRED

Merck still reigns as America's most admired large corporation. Procter & Gamble, Coca-Cola, and Anheuser-Busch return to the top ten after at least a year away, while Du Pont is the only first-timer.

RANK	LAST YEAR	COMPANY	SCORE
1	1	**Merck** Pharmaceuticals	8.90
2	4	**Philip Morris** Tobacco	8.78
3	2	**Rubbermaid** Rubber products	8.42
4	*13	**Procter & Gamble** Soaps, cosmetics	8.37
5	3	**3M** Scientific and photographic equipment	8.21
6	7	**PepsiCo** Beverages	8.16
6	5	**Wal-Mart** Retailing	8.16
8	*13	**Coca-Cola** Beverages	8.15
9	17	**Anheuser-Busch** Beverages	7.96
10	15	**Du Pont** Chemicals	7.93

*P&G and Coca-Cola were tied in score last year.

THE LEAST ADMIRED

California's Gibraltar Financial Corp., the next-to-least-admired in 1988, wins this year's booby prize. New to the bottom ten are Wang Labs, United Merchants & Manufacturers, K-H Corp., and Unisys.

RANK	LAST YEAR	COMPANY	SCORE
305	304	**Gibraltar Financial** Savings institutions	2.24
304	289	**Wang Laboratories** Computers (and office equipment)	3.06
303	298	**Control Data** Computers (and office equipment)	3.59
302	302	**Meritor Financial Group** Savings institutions	3.61
301	303	**Texas Air** Transportation	3.72
300	300	**LTV** Metals	3.86
299	–	**National Steel** Metals	4.01
298	295	**United Merchants & Mfrs.** Textiles	4.03
297	292	**K-H** Motor vehicles & parts	4.05
296	260	**Unisys** Computers (and office equipment)	4.18

WHAT THEY DID FOR SHAREHOLDERS

sales and earnings growth for three years running. PepsiCo has spent some $8 billion on acquisitions since 1985 and increased earnings at a compound annual rate of over 20% while doing so. Says Chief Executive D. Wayne Calloway: "We are not letting building for the 1990s get in the way of everyday results."

Muscular profits, of course, lift share prices. In 1989, Philip Morris's stock rose 63%, Merck's 34%, Procter & Gamble's 61%. P&G's former chief, John Smale, and his successor, Edwin Artzt, successfully pushed management authority down and speeded up decision-making. Better chemistry with shareholders also lifted Du Pont. By raising the quarterly dividend from $1.05 to $1.20 and announcing a $2 billion share repurchase program, new CEO Edgar Woolard improved his company's value as a long-term investment from 7.50 to 7.82 in our judges' rating.

The most admired are masters at rolling out new products and services. Merck holds one of the deepest hands among global players in the $100-billion-a-year prescription drug market. Last year 15 of its drugs had sales of over $100 million. Rubbermaid creates so many toys, trash cans, dish drains, and other plastic goodies that products less than five years old account for more than 30% of sales.

Nothing burnishes a reputation like being No. 1 in a market—and then gaining new ground. Declining sales throughout the 1980s left many U.S. tobacco companies gasping. By targeting its massive advertising budget more effectively on key audiences, such as smokers in their 20s, Philip Morris raised its market share from 31% to 42%.

Anheuser-Busch boosted its brands' share of the $15 billion U.S. beer market from 28% in 1980 to 43%. Since FORTUNE completed its survey on October 31, the short-term financial performance of No. 9 Anheuser has gone a bit flatter—the result of a bitter beer price war. But Salomon Brothers analyst Hugh Zurkuhlen thinks no one will keep the King of Beers from its goal of swallowing 50% of the U.S. market by the mid-1990s. Says he: "GM peaked in the late 1950s, and Sears in the early 1970s, once they got into a monopolistic situation. But Anheuser shows no sign of getting fat and happy."

LAUREL-RESTING and resistance to change are rarely found among those who top FORTUNE's honor roll. Consider 3M, which ranked fifth overall. Though awash in products—60,000 at last count—3M has spent $6 billion over the past five years redesigning its merchandise and reshaping manufacturing lines. Says security analyst Theresa Gusman of Salomon Brothers: "This is a company that develops a whole new process for making Scotch tape, even when it already dominates the market. They are amazing."

Merck, whose drugs have almost all been homegrown, is beginning to look beyond its own labs. To maintain strong earnings growth throughout this decade, the company is teaming with Johnson & Johnson to develop new over-the-counter drugs and with Du Pont on prescription pharmaceuticals that will help fight hypertension. PepsiCo—already the beverage industry leader in attracting, developing, and keeping talented people, according to our judges—gave each of its 100,000 employees stock options worth 10% of their salaries in 1989. Says CEO Calloway, who plans to continue the practice every year: "This just reinforces the theme that employees are the stewards of PepsiCo's assets."

But winners beware. Once any company's grip on the marketplace starts to slip, its reputation soon follows. Getting back on top can be harder than staying there. Ask IBM.

Big Blue held the most admired title until 1986, when Merck passed it, and its rank has been dropping ever since. In the current survey IBM fell 11 places to No. 45 and yielded the top spot in the computer industry to Hewlett-Packard for the second year

MOST ADMIRED

COMPANY	TOTAL RETURN TO INVESTORS 1979–89 annual average
Merck	23.9%
Philip Morris	30.1%
Rubbermaid	29.1%
Procter & Gamble	19.0%
3M	17.0%
PepsiCo	26.7%
Wal-Mart	46.1%
Coca-Cola	26.8%
Anheuser-Busch	29.4%
Du Pont	17.7%

LEAST ADMIRED

COMPANY	TOTAL RETURN TO INVESTORS 1979–89 annual average
Gibraltar Financial	–35.9%
Wang Laboratories	–3.7%
Control Data	–3.0%
Meritor Financial Group	N.A.
Texas Air	2.8%
LTV	–17.0%
National Steel	N.A.
United Merchants & Mfrs.	–9.9%
K-H	N.A.
Unisys	–1.1%

THE LINK BETWEEN REPUTATIONS AND RETURNS

Each of the most admired has consistently paid investors terrific returns. Wal-Mart's average annual total return (dividends plus appreciation in the stock) since 1979 leads the top ten. Those companies with the worst reputations produced poor long-term financial rewards.

in a row. Powerful desktop machines continue to slow the growth of the higher-margin mainframe market that IBM has long ruled, and the company has yet to devise a convincing strategy for coping with that shift. Recently, IBM announced its boldest move yet—a $2.3 billion cost-cutting drive that will trim 10,000 jobs from its 216,000-strong U.S. payroll.

IBM's troubles pale beside those of Unisys, another maker of large computers unable—so far—to adapt to the new world. From No. 260 last year, the company fell to No. 296 in 1989. There it joins two other data-processing doormats—Wang Laboratories, which dropped near the depths last year, and Control Data, which has been stuck among the bottom ten since 1987.

The least admired rarely stay in the cellar for more than a few years. The bad news is that many of them escape it by getting swallowed up. That fate in recent years claimed American Motors and Financial Corp. of America, among others. But Gibraltar Financial Corp. of Beverly Hills, this year's biggest loser in all eight categories, has other problems. Early in 1989 federal thrift regulators seized the bank holding company's two troubled operating subsidiaries, both of which were holding a bundle of money-losing real estate loans.

DEBT CRUSHED many reputations in 1989. The list of companies whose scores fell the most reads like a Who's Who of big borrowers: Interco, Ohio Mattress, West Point–Pepperell, and RJR Nabisco. RJR, which went private in a buyout of record size, sank most sharply—from No. 17 to No. 267—and took its biggest hit in the soundness of financial position category.

A few losers are on the mend. After four years among the bottom ten, BankAmerica leaped from No. 301 to No. 257, the best gain of any company. Bloodied by its foray into Latin America and a string of dumb loans in the U.S., the bank lost nearly $2 billion from 1985 to 1987. But since then a new management team, mainly recruited from Wells Fargo, has turned things around by shedding bad loans and aggressively pursuing retail customers. Says Prudential-Bache analyst George Salem: "BankAmerica now has one of the cleanest domestic portfolios in the business." In that happy respect at least, the business world differs from Shakespeare's tragedies. It's not impossible that a spotless reputation, once lost, might be regained.

REPORTER ASSOCIATE *Carol Davenport*

BIGGEST GAINS OVER LAST YEAR

BankAmerica, the most improved, fashioned an impressive comeback after nearly going down for the count. Lighter debt loads helped lift Texaco and Tenneco. Three tobacco companies—UST, American Brands, and Philip Morris—were among the top gainers.

COMPANY	POINT CHANGE	PERCENT	SCORE
BankAmerica	+1.64	42.9	5.46
Texaco	+1.09	23.5	5.73
UST	+0.93	14.0	7.58
United Technologies	+0.85	14.9	6.54
American Brands	+0.77	12.7	6.83
Tenneco	+0.75	14.7	5.84
American International Group	+0.68	10.3	7.30
Equitable Life Assurance	+0.65	14.4	5.16
American Standard	+0.63	11.2	6.29
Philip Morris	+0.63	7.8	8.78

BIGGEST LOSSES FROM LAST YEAR

Few reputations have dropped as dramatically as that of RJR Nabisco, which was taken private in 1988 by KKR in a record $25 billion buyout. The chief culprit in RJR's decline—a daunting debt load—was a trait shared by a number of the other big losers.

COMPANY	POINT CHANGE	PERCENT	SCORE
RJR Nabisco	−2.43	−31.6	5.27
Wang Laboratories	−1.58	−33.9	3.08
West Point-Pepperell	−1.46	−21.9	5.18
Ohio Mattress	−1.45	−21.5	5.31
Exxon	−1.35	−16.8	6.70
Interco	−1.20	−19.5	4.95
Unisys	−1.15	−21.6	4.18
Gibraltar Financial	−1.10	−32.9	2.24
Mack Trucks	−0.99	−18.1	4.49
Eastman Kodak	−0.77	−10.6	6.49

Gibraltar Financial 2.24
Wang Labs 3.08
0
0.5
1.0
1.5
2.0
2.5
3.0
LEAST ADMIRED

HOW ALL 305 COMPANIES RANK

Here are their scores, covering eight attributes, on a scale from zero to ten.

LTV 3.86
Texas Air 3.72
Meritor Financial Group 3.61
Control Data 3.59

Mack Trucks 4.49
Unisys 4.18
K-H 4.05
United Merch. & Mfrs. 4.03
National Steel 4.01

First Interstate Bancorp 4.98
Interco 4.95
Beatrice 4.88
Crossland Savings 4.88
Northrop 4.88
Zenith Electronics 4.82
Bethlehem Steel 4.67
Manville 4.65
Manufacturers Hanover 4.55

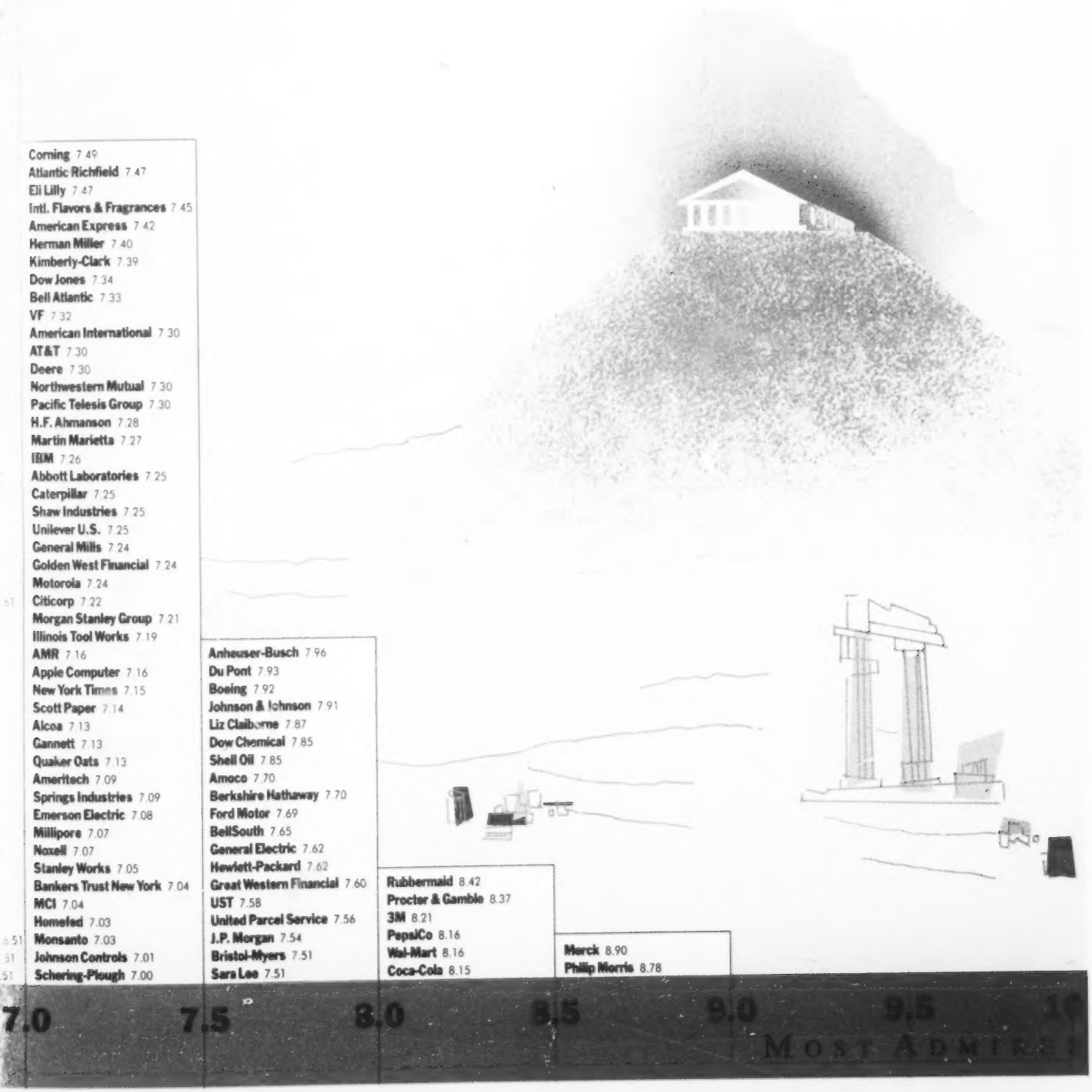
Asarco 5.48
Fieldcrest Cannon 5.48
CSX 5.47
BankAmerica 5.46
Hanson Industries NA 5.46
Safeway 5.45
Burlington Holdings 5.37
Fruit of the Loom 5.37
Henley Group 5.36
Chemical Banking 5.34
Glenfed 5.32
Ohio Mattress 5.31
Calfed 5.30
RJR Nabisco 5.27
SmithKline Beckman 5.26
Travelers 5.24
Great American Bank 5.23
Occidental Petroleum 5.23
USG 5.23
W.R. Grace 5.22
Mohasco 5.22
Union Carbide 5.21
Armco 5.19
Nortek 5.18
West Point-Pepperell 5.18
Sears Roebuck 5.17
Equitable Life Assurance 5.16
Warnaco 5.14
DWG 5.09
Santa Fe Pacific 5.08
Avon Products 5.04
Navistar International 5.03

Leslie Fay 5.99
Hartmarx 5.98
McGraw Hill 5.97
Unocal 5.97
Amax 5.96
Bank of New York 5.95
Minstar 5.95
Perkin-Elmer 5.95
Boise Cascade 5.94
Weyerhaeuser 5.94
Fluor 5.92
Owens-Illinois 5.92
Phillips-Van Heusen 5.92
Stone Container 5.92
Fleming 5.87
Connecticut General Life 5.86
Combustion Engineering 5.85
Chrysler 5.84
Tenneco 5.84
Cigna 5.82
McDonnell Douglas 5.82
John Hancock 5.81
Textron 5.77
Allied-Signal 5.76
Kroger 5.74
Pitney Bowes 5.74
Texaco 5.73
UAL 5.73
Constar International 5.71
Oxford Industries 5.70
Dr Pepper/Seven-Up 5.69
Ryder System 5.69
Travelers Corp. 5.69
Tyler 5.69
Lafarge 5.68
Maxus Energy 5.68
Tektronix 5.66
Honeywell 5.65
K mart 5.65
American Financial 5.63
Chase Manhattan 5.60
Borg-Warner 5.58
Litton Industries 5.56
American Stores 5.55
Champion International 5.54
Hillsborough Holdings 5.54
USX 5.50
Westmoreland Coal 5.50

Brunswick 6.49
Eastman Kodak 6.49
Hoechst Celanese 6.49
Cummins Engine 6.47
General Dynamics 6.47
James River 6.45
Owens-Corning Fiberglas 6.45
Rockwell International 6.44
Baxter International 6.43
Kellwood 6.43
Becton Dickinson 6.42
Cyprus Minerals 6.42
Pfizer 6.41
Fed. Nat'l Mortgage Assn. 6.40
Raytheon 6.40
Avondale Industries 6.37
Borden 6.36
Time Warner 6.36
McKesson 6.33
Union Texas 6.33
International Paper 6.32
Nynex 6.32
Whirlpool 6.32
Coca-Cola Enterprises 6.31
Dresser Industries 6.31
Louisiana Land & Expl. 6.31
Metropolitan Life 6.31
Super Valu Stores 6.31
Union Pacific 6.30
American Standard 6.29
Phelps Dodge 6.29
TRW 6.28
Vulcan Materials 6.28
Lockheed 6.27
Hon Industries 6.26
Phillips Petroleum 6.21
Southern 6.21
Aetna Life & Casualty 6.19
New York Life 6.19
Baker Hughes 6.18
Mitchell Energy 6.17
Adolph Coors 6.16
Dibrell Brothers 6.16
Kimball International 6.15
Merrill Lynch 6.15
Norton 6.15
USAir Group 6.13
Gr. Atlantic & Pacific Tea 6.11
NCR 6.11
Halliburton 6.09
Carlisle 6.08
General Motors 6.08
Salomon 6.07
Inland Steel 6.06
Aetna Life 6.05
ITT 6.05
Burlington Northern 6.04
Harsco 6.04
Nerco 6.04
North American Philips 6.04
Teachers Ins. & Annuity 6.04
Standard Commercial 6.04
Alberto Culver 6.03
Polaroid 6.02

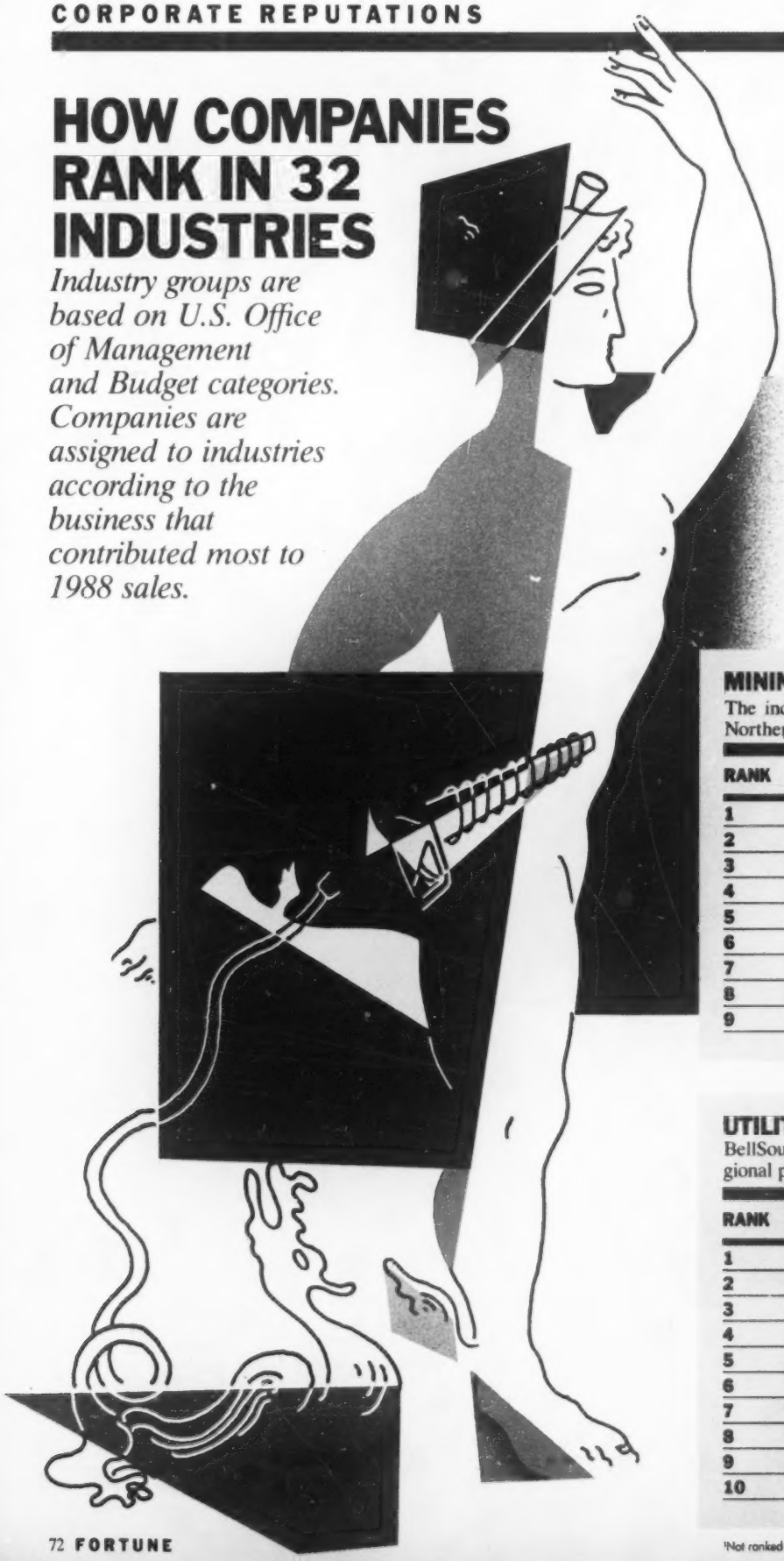
ConAgra 6.98
Mobil 6.96
R.R. Donnelley & Sons 6.94
Prudential 6.94
Southwestern Bell 6.93
Trinity Industries 6.93
Armstrong 6.92
Clorox 6.91
Cooper Tire & Rubber 6.91
Bayer USA 6.89
Burlington Resources 6.89
Delta Air Lines 6.89
Fleetwood Enterprises 6.89
Hillenbrand Industries 6.89
Masco 6.88
PPG Industries 6.88
Black & Decker 6.87
Dayton Hudson 6.84
Gillette 6.84
Newell 6.84
Reynolds Metals 6.84
US West 6.84
American Brands 6.83
Mead 6.83
Chevron 6.81
Universal 6.81
Eaton 6.80
Tribune 6.80
Colgate-Palmolive 6.79
Security Pacific 6.79
Leggett & Platt 6.73
Georgia Pacific 6.72
Guilford Mills 6.72
Times Mirror 6.72
Standard Products 6.71
Digital Equipment 6.70
Exxon 6.70
Ralston Purina 6.68
Premark International 6.67
Dana 6.66
Parker Hannifin 6.66
Ferro 6.65
Crown Cork & Seal 6.63
Dover 6.62
Outboard Marine 6.61
Goodyear Tire & Rubber 6.61
Knight-Ridder 6.61
BASF 6.60
Ingersoll-Rand 6.60
Paccar 6.60
Warner-Lambert 6.60
Ball 6.59
GTE 6.58
Xerox 6.58
Westinghouse 6.56
Dixie Yarns 6.55
Lorillard 6.55
Texas Instruments 6.55
Archer Daniels Midland 6.54
Pacific Gas & Electric 6.54
J.C. Penney 6.54
United Technologies 6.54
Brown-Forman 6.53
United Telecom. 6.52
American Home Products 6.51
May Department Stores 6.51
Jos. E. Seagram & Sons 6.51

3.5 4.0 4.5 5.0 5.5 6.0 6.5


Corning 7.49
Atlantic Richfield 7.47
Eli Lilly 7.47
Intl. Flavors & Fragrances 7.45
American Express 7.42
Herman Miller 7.40
Kimberly-Clark 7.39
Dow Jones 7.34
Bell Atlantic 7.33
VF 7.32
American International 7.30
AT&T 7.30
Deere 7.30
Northwestern Mutual 7.30
Pacific Telesis Group 7.30
H.F. Ahmanson 7.28
Martin Marietta 7.27
IBM 7.26
Abbott Laboratories 7.25
Caterpillar 7.25
Shaw Industries 7.25
Unilever U.S. 7.25
General Mills 7.24
Golden West Financial 7.24
Motorola 7.24
Citicorp 7.22
Morgan Stanley Group 7.21
Illinois Tool Works 7.19
AMR 7.16
Apple Computer 7.16
New York Times 7.15
Scott Paper 7.14
Alcoa 7.13
Gannett 7.13
Quaker Oats 7.13
Ameritech 7.09
Springs Industries 7.09
Emerson Electric 7.08
Millipore 7.07
Noxell 7.07
Stanley Works 7.05
Bankers Trust New York 7.04
MCI 7.04
Homefed 7.03
Monsanto 7.03
Johnson Controls 7.01
Schering-Plough 7.00
Anheuser-Busch 7.96
Du Pont 7.93
Boeing 7.92
Johnson & Johnson 7.91
Liz Claiborne 7.87
Dow Chemical 7.85
Shell Oil 7.85
Amoco 7.70
Berkshire Hathaway 7.70
Ford Motor 7.69
BellSouth 7.65
General Electric 7.62
Hewlett-Packard 7.62
Great Western Financial 7.60
UST 7.58
United Parcel Service 7.56
J.P. Morgan 7.54
Bristol-Myers 7.51
Sara Lee 7.51
Rubbermaid 8.42
Procter & Gamble 8.37
3M 8.21
PepsiCo 8.16
Wal-Mart 8.16
Coca-Cola 8.15
Merck 8.90
Philip Morris 8.78
7.0
7.5
8.0
8.5
9.0
9.5
MOST ADMIRED

HOW COMPANIES RANK IN 32 INDUSTRIES

Industry groups are based on U.S. Office of Management and Budget categories. Companies are assigned to industries according to the business that contributed most to 1988 sales.



PETROLEUM REFINING

Haunted by the Valdez spill, Exxon fell to No. 6. Analysts ranked it lower than did executives and directors.

RANK	LAST YEAR	COMPANY	SCORE
1	2	Shell Oil	7.85
2	3	Amoco	7.70
3	4	Arco	7.47
4	5	Mobil	6.96
5	7	Chevron	6.81
6	1	Exxon	6.70
7	–	Phillips Petroleum[1]	6.21
8	–	Unocal[1]	5.97
9	10	Texaco	5.73
10	8	USX	5.50

MINING, CRUDE OIL PRODUCTION

The industry's new No. 1 is a spinoff of Burlington Northern railroad's asset-rich energy businesses.

RANK	LAST YEAR	COMPANY	SCORE
1	–	Burlington Resources[1]	6.89
2	3	Cyprus Minerals	6.42
3	6	Union Texas	6.33
4	4	Louisiana Land & Exploration	6.31
5	1	Vulcan Materials	6.28
6	4	Mitchell Energy	6.17
7	7	Nerco	6.04
8	9	Maxus Energy	5.68
9	8	Westmoreland Coal	5.50

UTILITIES

BellSouth, the biggest and most profitable of the regional phone companies, was tops in every category.

RANK	LAST YEAR	COMPANY	SCORE
1	1	BellSouth	7.65
2	2	Bell Atlantic	7.33
3	4	Pacific Telesis Group	7.30
4	3	Ameritech	7.09
5	6	Southwestern Bell	6.93
6	7	US West	6.84
7	9	GTE	6.58
8	8	Pacific Gas & Electric	6.54
9	5	Nynex	6.32
10	10	Southern	6.21

[1]Not ranked last year.

FOREST PRODUCTS

Kimberly-Clark leads in all categories but social responsibility, where Weyerhaeuser repeats as winner.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Kimberly-Clark	7.39
2	2	Scott Paper	7.14
3	3	Mead	6.83
4	7	Georgia-Pacific	6.72
5	4	James River	6.45
6	10	International Paper	6.32
7	6	Boise Cascade	5.94
7	5	Weyerhaeuser	5.94
9	8	Stone Container	5.92
10	9	Champion International	5.54

PHARMACEUTICALS

Led by No. 1 Merck, the industry has a median score of 7.13, the highest of all 32 groups surveyed.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Merck	8.90
2	2	Johnson & Johnson	7.91
3	5	Bristol-Myers	7.51
4	4	Eli Lilly	7.47
5	3	Abbott Laboratories	7.25
6	–	Schering-Plough[1]	7.00
7	7	Warner-Lambert	6.60
8	8	American Home Products	6.51
9	6	Pfizer	6.41
10	10	SmithKline Beckman[2]	5.26

TEXTILES

Carpet maker Shaw Industries of Dalton, Georgia, delivered record earnings and leaps into first place.

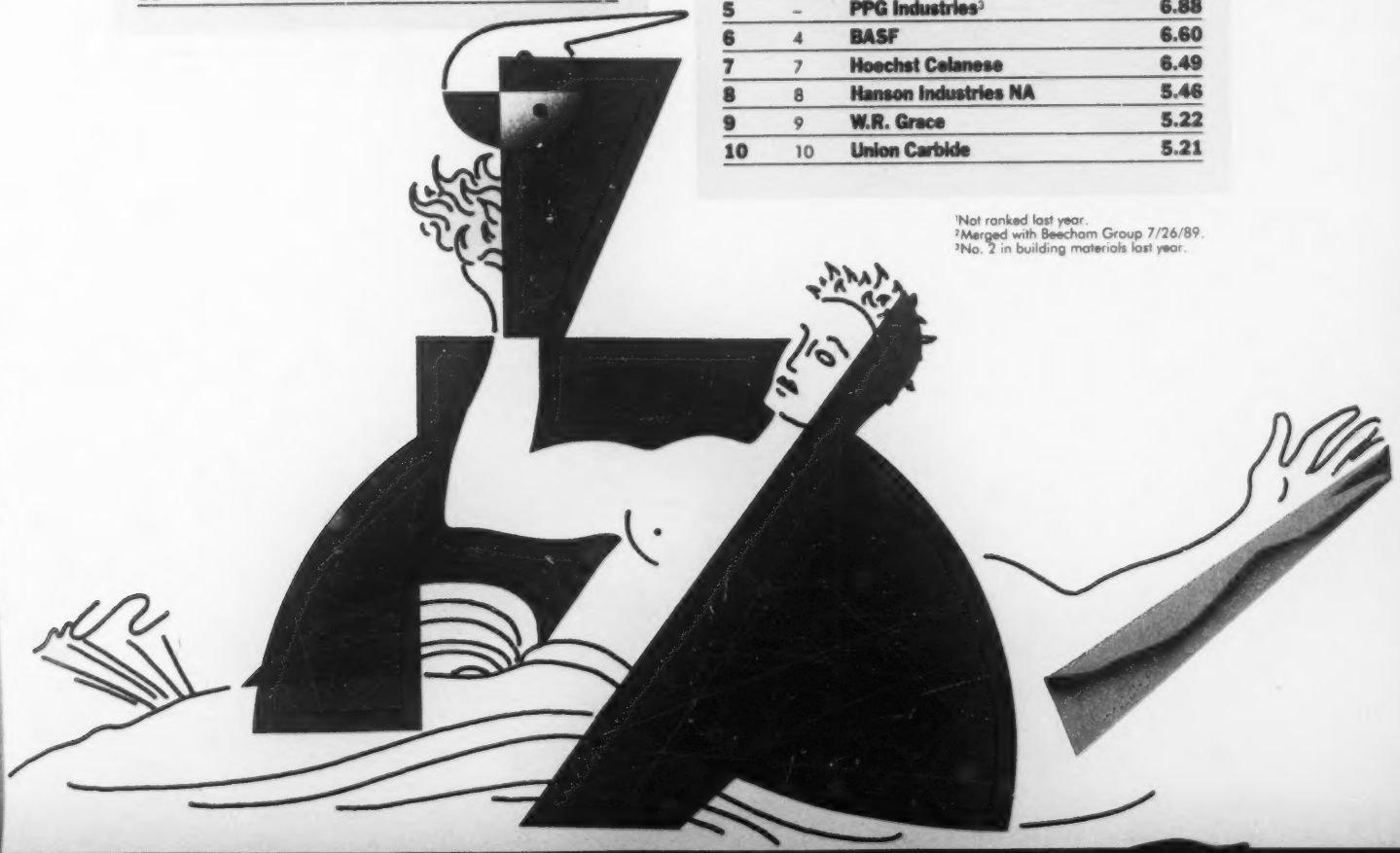
RANK	LAST YEAR	COMPANY	SCORE
1	4	Shaw Industries	7.25
2	1	Springs Industries	7.09
3	3	Armstrong	6.92
4	2	Guilford Mills	6.72
5	6	Dixie Yarns	6.55
6	8	Fieldcrest Cannon	5.48
7	9	Burlington Holdings	5.37
8	5	West Point-Pepperell	5.18
9	7	DWG	5.09
10	10	United Merchants & Mfrs.	4.03

CHEMICALS

Once again, two archrivals have traded places at the top. In 1988 Dow won. This year it's Du Pont.

RANK	LAST YEAR	COMPANY	SCORE
1	2	Du Pont	7.93
2	1	Dow Chemical	7.85
3	6	Monsanto	7.03
4	3	Bayer USA	6.89
5	–	PPG Industries[3]	6.88
6	4	BASF	6.60
7	7	Hoechst Celanese	6.49
8	8	Hanson Industries NA	5.46
9	9	W.R. Grace	5.22
10	10	Union Carbide	5.21

[1]Not ranked last year.
[2]Merged with Beecham Group 7/26/89.
[3]No. 2 in building materials last year.



BUILDING MATERIALS

Corning scores another easy win. It ranks as the most admired company in the industry by every yardstick.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Corning[2]	7.49
2	3	Owens-Corning Fiberglas	6.45
3	–	American Standard[3]	6.29
4	4	Norton	6.15
5	5	Owens-Illinois	5.92
6	6	Lafarge	5.68
7	8	Hillsborough Holdings[4]	5.54
8	7	USG	5.23
9	–	Nortek[1]	5.18
10	10	Manville	4.65

RUBBER PRODUCTS

Despite competition from four newcomers, Rubbermaid wins handily for the fifth year in a row.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Rubbermaid	8.42
2	–	Millipore[1]	7.07
3	–	Johnson Controls[1]	7.01
4	2	Cooper Tire & Rubber	6.91
5	5	Standard Products	6.71
6	3	Premark International	6.67
7	–	Ferro[1]	6.65
8	4	Goodyear Tire & Rubber	6.61
9	6	Carlisle	6.08
10	–	Constar International[1]	5.71

METAL PRODUCTS

Illinois Tool, No. 1 for three years, leads by four measures. Gillette has the edge in innovativeness.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Illinois Tool Works	7.19
2	2	Stanley Works	7.05
3	–	Hillenbrand Industries[1]	6.89
4	4	Gillette	6.84
4	–	Newell[1]	6.84
6	7	Crown Cork & Seal	6.63
7	5	Ball	6.59
8	9	Harsco	6.04
9	–	Combustion Engineering[1]	5.85
10	–	Tyler[1]	5.69

METALS

Alcoa continues to foil rivals: It has been No. 1 since 1983. Reynolds wins in use of assets and innovation.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Alcoa	7.13
2	2	Reynolds Metals	6.84
3	4	Phelps Dodge	6.29
4	3	Inland Steel	6.06
5	5	Amax	5.96
6	–	Asarco[1]	5.48
7	6	Armco	5.19
8	8	Bethlehem Steel	4.67
9	–	National Steel[1]	4.01
10	10	LTV	3.86

[1]Not ranked last year.
[2]Name changed from Corning Glass Works.
[3]No. 10 in industrial and farm equipment last year.
[4]Name changed from Jim Walter.

RETAILING

Sears slumps. Dayton Hudson wins for responsibility, while Wal-Mart ranks first in everything else.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Wal-Mart	8.16
2	2	Dayton Hudson	6.84
3	3	J.C. Penney	6.54
4	4	May Department Stores	6.51
5	–	Great Atlantic & Pacific Tea[1]	6.11
6	7	Kroger	5.74
7	5	K mart	5.65
8	8	American Stores	5.55
9	9	Safeway	5.45
10	6	Sears Roebuck	5.17

SOAPS, COSMETICS

No. 1 Procter & Gamble cleans up in every attribute. Avon ranks last—except in social responsibility.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Procter & Gamble	8.37
2	2	Intl. Flavors & Fragrances	7.45
3	–	Unilever U.S.[1]	7.25
4	–	Noxell[1,2]	7.07
5	5	Clorox	6.91
6	4	Colgate-Palmolive	6.79
7	–	Alberto Culver[1]	6.03
8	9	Avon Products	5.04

APPAREL

Other clothing makers just don't measure up to Liz Claiborne. The trendsetter is tops by six measures.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Liz Claiborne	7.87
2	2	VF	7.32
3	4	Kellwood	6.43
4	7	Leslie Fay	5.99
5	3	Hartmarx	5.98
6	6	Phillips-Van Heusen	5.92
7	10	Oxford Industries	5.70
8	8	Fruit of the Loom	5.37
9	9	Warnaco	5.14

[1]Not ranked last year.
[2]Acquired by Procter & Gamble 11/30/89.

FOOD

RJR who? Shrugging aside its hefty new rival, Sara Lee wins the blue ribbon for the fourth straight year.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Sara Lee	7.51
2	2	General Mills	7.24
3	–	Quaker Oats[1]	7.13
4	4	ConAgra	6.98
5	5	Ralston Purina	6.68
6	7	Archer Daniels Midland	6.54
7	6	Borden	6.36
8	–	RJR Nabisco[2]	5.27
9	10	Occidental Petroleum	5.23
10	9	Beatrice	4.88

TOBACCO

Consistently rich returns and a steadily rising market share have given Philip Morris king-size scores.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Philip Morris	8.78
2	3	UST	7.58
3	5	American Brands	6.83
4	4	Universal	6.81
5	–	Loriliard[1]	6.55
6	–	Dibrell Brothers[3]	6.16
7	–	Standard Commercial[1]	6.04

BEVERAGES

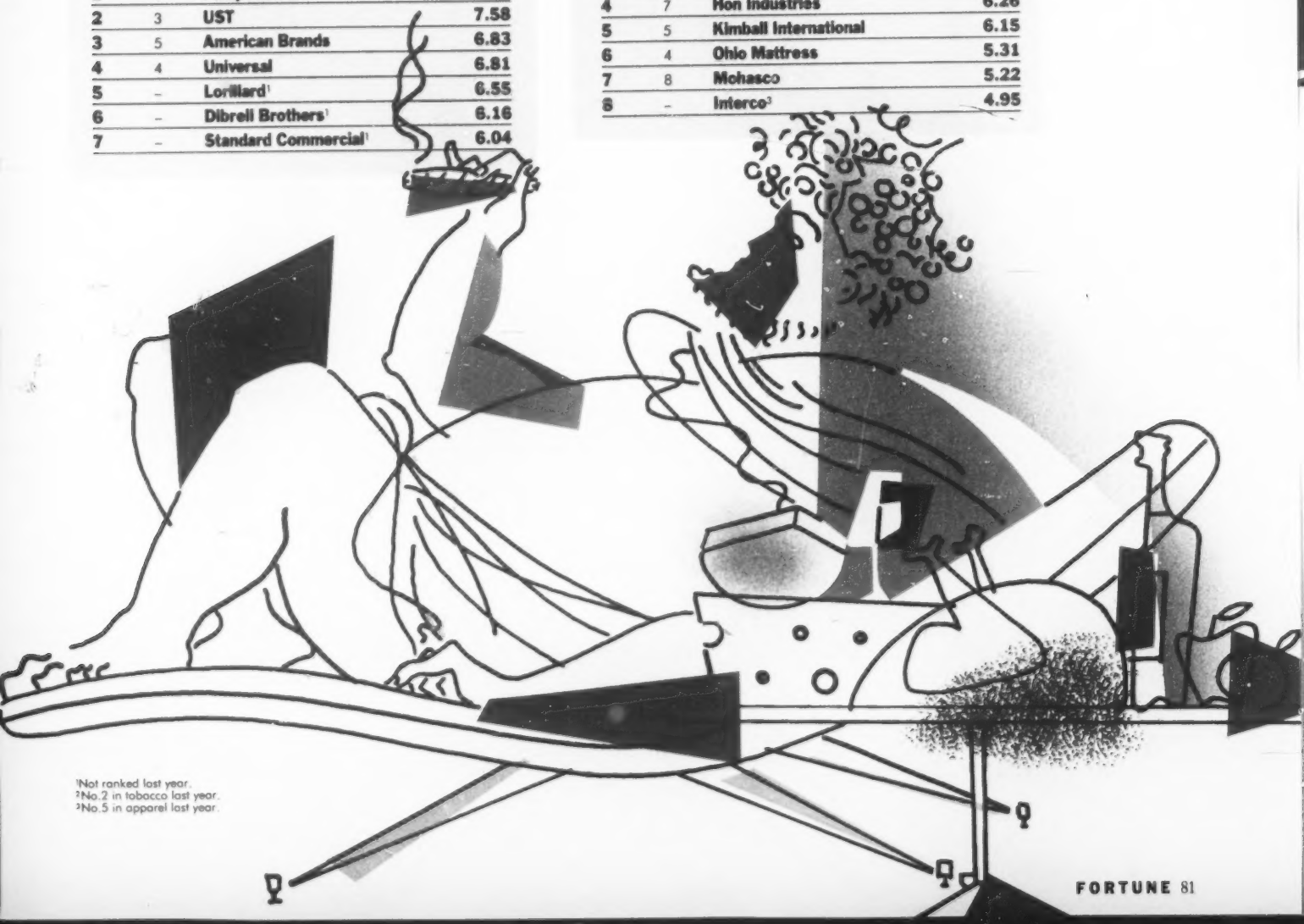
Pepsi clung to first place—barely. Runner-up Coke leads by four measures, including quality of products.

RANK	LAST YEAR	COMPANY	SCORE
1	1	PepsiCo	8.16
2	2	Coca-Cola	8.15
3	3	Anheuser-Busch	7.96
4	8	Brown-Forman	6.53
5	5	Joseph E. Seagram & Sons	6.51
6	4	Coca-Cola Enterprises	6.31
7	7	Adolph Coors	6.16
8	–	Dr Pepper/Seven-Up[1]	5.69

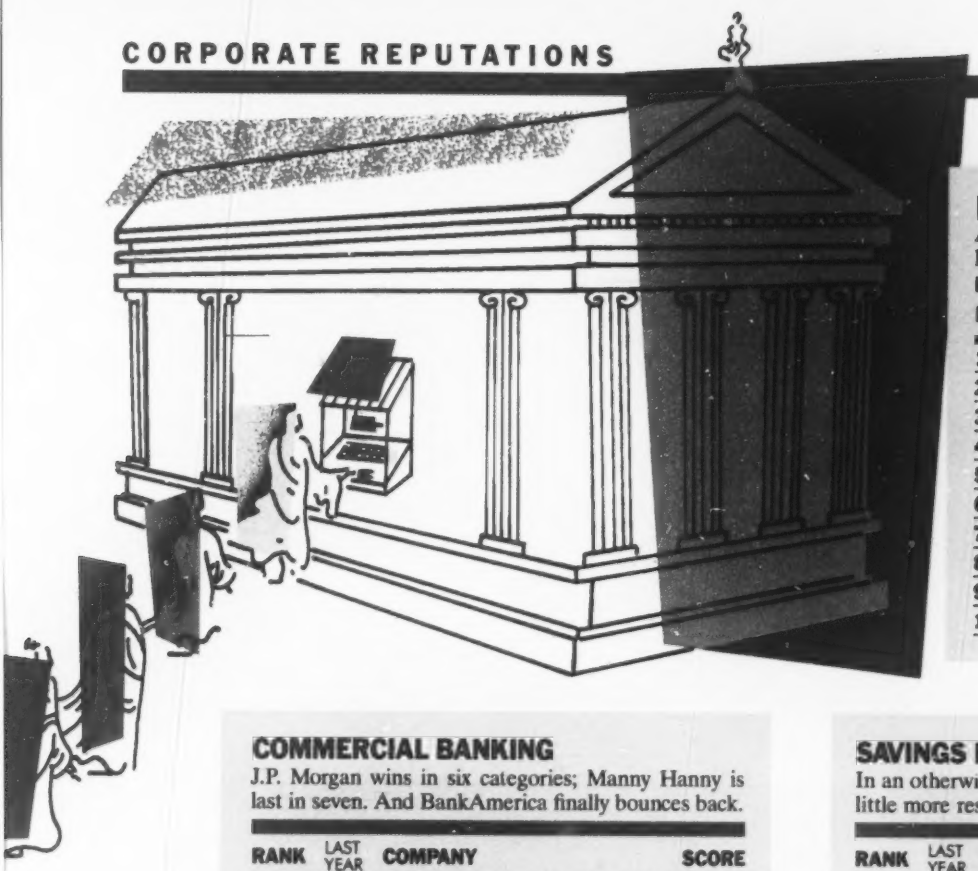
FURNITURE

Herman Miller fell out of the top ten. But in an industry marked by wobbly profits, it scored highest.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Herman Miller	7.40
2	2	Masco	6.88
3	3	Leggett & Platt	6.73
4	7	Hon Industries	6.26
5	5	Kimball International	6.15
6	4	Ohio Mattress	5.31
7	8	Mohasco	5.22
8	–	Interco[3]	4.95



[1]Not ranked last year.
[2]No.2 in tobacco last year.
[3]No.5 in apparel last year.



DIVERSIFIED FINANCIAL

American Express is first for the fourth year. AIG, helped by strong foreign earnings, moves up a notch.

RANK	LAST YEAR	COMPANY	SCORE
1	1	American Express	7.42
2	3	American International Group	7.30
3	2	Morgan Stanley Group	7.21
4	4	Federal National Mortgage Assoc.	6.40
5	7	Aetna Life & Casualty	6.19
6	8	Merrill Lynch	6.15
7	6	Salomon	6.07
8	–	ITT[3]	6.05
9	9	Cigna	5.82
10	10	Travelers Corp.	5.69

COMMERCIAL BANKING

J.P. Morgan wins in six categories; Manny Hanny is last in seven. And BankAmerica finally bounces back.

RANK	LAST YEAR	COMPANY	SCORE
1	1	J.P. Morgan	7.54
2	2	Citicorp	7.22
3	3	Bankers Trust New York	7.04
4	4	Security Pacific	6.79
5	–	Bank of New York[1]	5.95
6	7	Chase Manhattan	5.60
7	10	BankAmerica	5.46
8	8	Chemical Banking	5.34
9	6	First Interstate Bancorp	4.98
10	9	Manufacturers Hanover	4.55

SAVINGS INSTITUTIONS

In an otherwise devastated industry, the top two get a little more respect. They both scored higher this year.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Great Western Financial	7.60
2	2	H.F. Ahmanson	7.28
3	–	Golden West Financial[1]	7.24
4	3	Homefed[4]	7.03
5	4	Glenfed	5.32
6	5	Calfed	5.30
7	6	Great American Bank[5]	5.23
8	–	Crossland Savings[1]	4.88
9	8	Meritor Financial Group	3.61
10	9	Gibraltar Financial	2.24

DIVERSIFIED SERVICE

AT&T, a newcomer to this list, goes the long distance and reaches No. 1. It ranks first in four attributes.

RANK	LAST YEAR	COMPANY	SCORE
1	–	American Telephone & Telegraph[2]	7.30
2	–	MCI[1]	7.04
3	–	United Telecommunications[1]	6.52
4	3	McKesson	6.33
5	5	Super Valu Stores	6.31
6	–	Halliburton[1]	6.09
7	9	Fluor	5.92
8	7	Fleming Companies	5.87
9	4	Ryder System	5.69
10	–	American Financial[1]	5.63

LIFE INSURANCE

Northwestern Mutual, which ranks No. 38 overall this year, has led the industry in every survey since 1983.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Northwestern Mutual Life	7.30
2	2	Prudential of America	6.94
3	4	Metropolitan Life	6.31
4	5	New York Life	6.19
5	3	Aetna Life	6.05
6	5	Teachers Insurance & Annuity	6.04
7	7	Connecticut General Life	5.86
8	8	John Hancock Mutual Life	5.81
9	9	Travelers	5.24
10	10	Equitable Life Assurance	5.16

[1]Not ranked last year.
[2]No. 4 in Electronics last year.
[3]No. 10 in electronics last year.
[4]Name changed from Home Federal Savings & Loan Association.
[5]Name changed from Great American First Savings Bank.

ELECTRONICS

General Electric moves from 40th to 20th place overall. Motorola ousts Emerson from the No. 2 spot.

RANK	LAST YEAR	COMPANY	SCORE
1	1	General Electric	7.62
2	3	Motorola	7.24
3	2	Emerson Electric	7.08
4	8	Westinghouse	6.56
5	5	Texas Instruments	6.55
6	6	Raytheon	6.40
7	–	Whirlpool[1]	6.32
8	7	TRW	6.28
9	–	North American Philips[1]	6.04
10	9	Honeywell	5.65

SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT

3M, the industry leader for seven years in a row, is making its fifth appearance among the top ten.

RANK	LAST YEAR	COMPANY	SCORE
1	1	3M	8.21
2	3	Xerox	6.58
3	2	Eastman Kodak	6.49
4	–	Baxter International[2]	6.43
5	5	Becton Dickinson	6.42
6	6	Polaroid	6.02
7	7	Perkin-Elmer	5.95
8	8	Tektronix	5.66
9	–	Litton Industries[1]	5.56
10	–	Henley Group[1]	5.36

COMPUTERS (includes office equipment)

Hewlett-Packard scores highest for five attributes but trails IBM in financial soundness and responsibility.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Hewlett-Packard	7.62
2	3	IBM	7.26
3	2	Apple Computer	7.16
4	4	Digital Equipment	6.70
5	5	NCR	6.11
6	7	Pitney Bowes	5.74
7	–	Zenith Electronics[1]	4.82
8	8	Unisys	4.18
9	10	Control Data	3.59
10	9	Wang Laboratories	3.08

PUBLISHING, PRINTING

Berkshire—in this class because it owns *World Book* and Buffalo *News*—wins top honors by four traits.

RANK	LAST YEAR	COMPANY	SCORE
1	–	Berkshire Hathaway[1]	7.70
2	1	Dow Jones	7.34
3	3	New York Times	7.15
4	4	Gannett	7.13
5	7	R.R. Donnelley & Sons	6.94
6	5	Tribune	6.80
7	7	Times Mirror	6.72
8	9	Knight-Ridder	6.61
9	6	Time Warner[3]	6.36
10	10	McGraw-Hill	5.97

[1]Not ranked last year.
[2]No. 9 in pharmaceuticals last year.
[3]Name changed from Time Inc. upon acquisition of Warner Communications.

TRANSPORTATION EQUIPMENT

Trinity makes boxcars for railroads. It leads by four measures. Runner-up Fleetwood wins two.

RANK	LAST YEAR	COMPANY	SCORE
1	–	Trinity Industries[1]	6.93
2	2	Fleetwood Enterprises	6.89
3	–	Outboard Marine[1]	6.62
4	–	Brunswick[2]	6.49
5	–	Avondale Industries[1]	6.37
6	3	Minstar	5.95

TRANSPORTATION

United Parcel Service always delivers: It raced to the head of this pack in 1984 and has stayed there since.

RANK	LAST YEAR	COMPANY	SCORE
1	1	United Parcel Service	7.56
2	2	AMR	7.16
3	3	Delta Air Lines	6.89
4	4	Union Pacific	6.30
5	–	USAir Group[1]	6.13
6	5	Burlington Northern	6.04
7	6	UAL	5.73
8	7	CSX	5.47
9	9	Santa Fe Pacific[3]	5.08
10	10	Texas Air	3.72

AEROSPACE

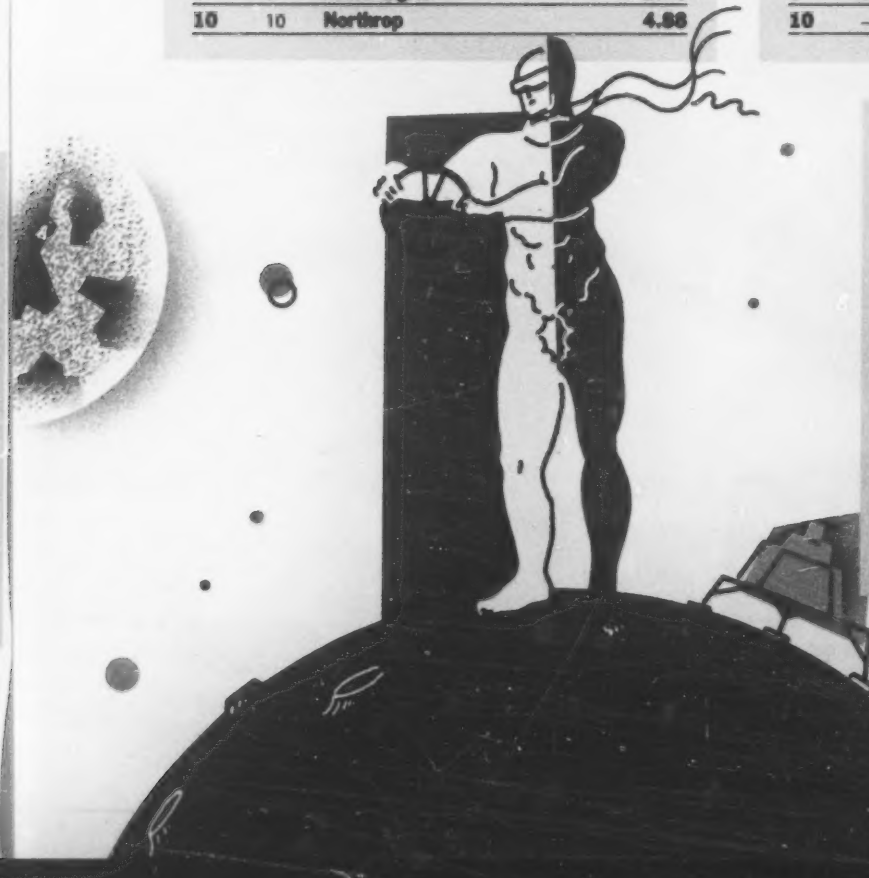
Boeing still rules the skies. But soaring jet-engine sales lifted United Technologies from No. 7 to No. 3.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Boeing	7.92
2	2	Martin Marietta	7.27
3	7	United Technologies	6.54
4	6	General Dynamics	6.47
5	3	Rockwell International	6.44
6	4	Lockheed	6.27
7	5	McDonnell Douglas	5.82
8	8	Textron	5.77
9	9	Allied-Signal	5.76
10	10	Northrop	4.88

INDUSTRIAL AND FARM EQUIPMENT

Strong farm equipment sales helped to push Deere past Caterpillar in this industry's pecking order.

RANK	LAST YEAR	COMPANY	SCORE
1	2	Deere	7.30
2	1	Caterpillar	7.25
3	3	Black & Decker	6.87
4	–	Parker-Hannifin[1]	6.66
5	–	Dover[1]	6.62
6	5	Ingersoll-Rand	6.60
7	4	Cummins Engine	6.47
8	7	Dresser Industries	6.31
9	9	Baker Hughes	6.18
10	–	Tenneco[4]	5.84



MOTOR VEHICLES AND PARTS

Nobody is anywhere near Ford's bumper. America's most profitable carmaker was tops by every measure.

RANK	LAST YEAR	COMPANY	SCORE
1	1	Ford Motor	7.69
2	–	Eaton[1]	6.80
3	2	Dana	6.66
4	3	Paccar	6.60
5	7	General Motors	6.08
6	4	Chrysler	5.84
7	–	Borg-Warner[1]	5.58
8	8	Navistar International	5.03
9	9	Mack Trucks	4.49
10	10	K-H Corp.[5,6]	4.05

[1]Not ranked last year.
[2]No. 6 in industrial and farm equipment last year.
[3]Name changed from Santa Fe Southern Pacific.
[4]No. 9 in petroleum refining last year.
[5]Name changed from Fruehauf.
[6]Acquired by Varity Corp.

THE BEST AND WORST STOCKS OF 1989

There were plenty of reasons to sit on the sidelines last year, but you would have done best by ignoring them all and taking a giant leap into the stock market. ■ *by Karen Nickel*

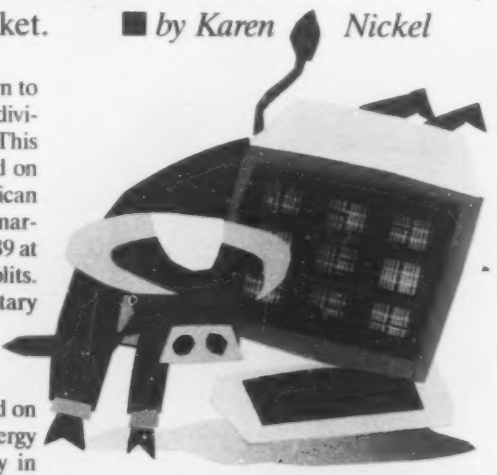
DESPITE BEARISH economic forecasts, a mini–market crash in October, and a crisis in the savings & loan business, investors had a wonderful year in 1989. The Dow Jones Industrial Average bounded ahead 27%. Investors who picked wisely did much, much better.

Compiled jointly by Wright Investors' Service and Wilshire Associates, our performance rankings are based on total return to investors, which includes reinvested dividends as well as price appreciation. This year's list separately ranks issues traded on the New York Stock Exchange, American Stock Exchange, and over-the-counter markets. Included are stocks that started 1989 at $5 or more per share, adjusted for splits. Partnership units, American Depositary Receipts, and closed-end funds are excluded (for an examination of foreign stock markets, see next story).

The highest total return ever recorded on our lists was posted this past year by Energy Ventures, a small oil and gas company in Houston that turned into a gusher, returning 559%. It was one of many top performers benefiting from higher oil and gas prices.

Another big boost to stocks came from the ongoing trend toward corporate restructuring. Takeovers, however, were on the wane as a driving force behind stocks. Though acquisitions and leveraged buyouts helped propel stocks during the year's first half, the October market drop scuttled some deals and cooled investor interest in others.

As with all stocks that rise sharply, an inevitable question arises over when to sell. That time may have already passed for investors in L.A. Gear, the best-performing stock on the New York Stock Exchange last year, with a 185% return. Made a star by the fickle winds of footwear fashion, the company has recently fallen from favor. The stock is down 33% from its November highs. Reports of selling by insiders, a Justice Department investigation of alleged underpayment of customs duties (which the company denies), and the departure of the chief financial officer in late 1989 suggest more rough weather ahead. Not all highfliers run into problems. Just the same, it's worth remembering the steeper a stock climbs, the farther it may fall.



NEW YORK STOCK EXCHANGE
THE 10 WORST

		STOCK PRICE 12/31 1988	1989	DIVIDENDS PER SHARE	TOTAL RETURN TO INVESTORS	COMMENTS
1	**Integrated Resources** (financial services)	$13.88	$0.19	–	-99%	Defaulted on debt last summer
2	**Lomas Financial** (financial services)	$12.62	$1.00	$0.53	-92%	Entered Chapter 11 in September
3	**Bay Financial** (real-estate development)	$11.62	$1.00	–	-91%	Rapidly deteriorating property markets
4	**Imperial Corp. of Amer.** (savings & loan)	$9.12	$0.94	–	-90%	Junk-bond losses, problem loans
5	**Home Owners Savings Bank** (S&L)	$8.38	$1.12	–	-87%	Stung by new federal capital requirements
6	**Crossland Savings** (savings & loan)	$17.38	$3.38	$0.80	-79%	Rising loan losses; new capital requirements
7	**Rexene** (petrochemicals)	$22.00	$3.50	$7.80	-75%	Lower sales; suspended dividend
8	**National Education** (educational services)	$23.25	$6.88	–	-70%	Sharp revenue decline
9	**Circle K** (retailing)	$11.38	$3.38	$0.14	-70%	Company decided not to put itself up for sale
10	**MAI Basic Four** (computer systems)	$8.50	$2.88	–	-66%	Costly attempt to take over Prime Computer

ILLUSTRATIONS BY RICHARD OSAKA

NEW YORK STOCK EXCHANGE
THE 50 BEST

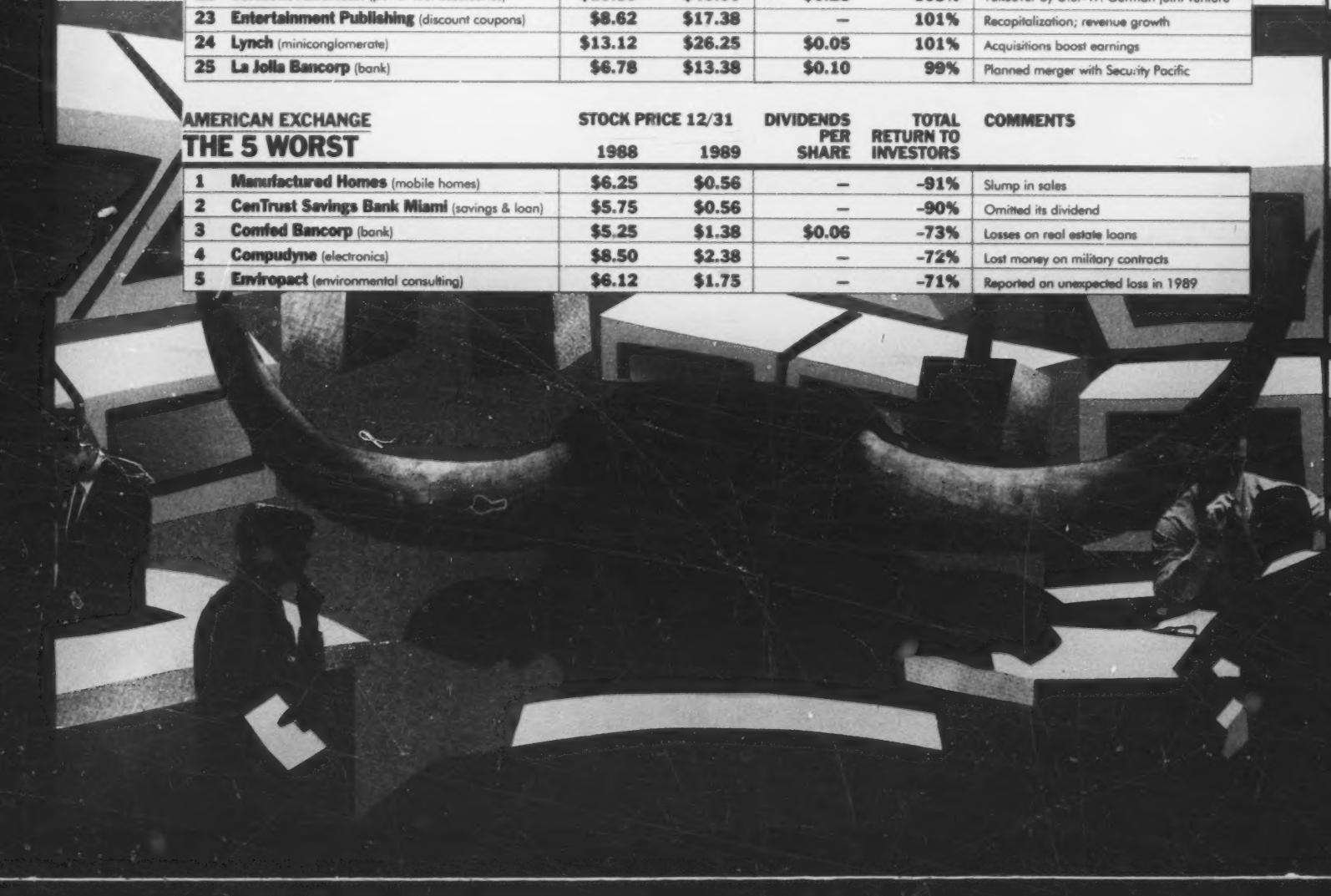
		STOCK PRICE 12/31		DIVIDENDS PER SHARE	TOTAL RETURN TO INVESTORS	COMMENTS
		1988	1989			
1	**L.A. Gear** (footwear)	$10.94	$31.12	–	185%	A jump in high-style sneaker sales
2	**Mylan Labs** (pharmaceuticals)	$8.88	$24.25	$0.10	176%	New drug for Parkinson's disease
3	**Shaw Industries** (carpet manufacturer)	$11.75	$31.00	$0.40	169%	Market-share leader; low-cost producer
4	**Holiday** (hotels, gaming)	$27.00	$71.75	–	166%	Sold Holiday Inns to Bass PLC (Britain)
5	**Conseco** (insurance)	$11.12	$26.88	$0.20	145%	Successful acquisitions of life companies
6	**Enterra** (oil, gas)	$6.00	$14.38	–	140%	Industry upswing
7	**Apache** (oil, gas)	$7.88	$18.38	$0.28	139%	Industry upswing
8	**Crawford & Co.** (insurance adjuster)	$14.83	$33.75	$0.51	133%	High incidence of catastrophes
9	**Sea Containers Ltd.** (transportation)	$30.12	$68.00	$0.60	129%	Takeover target
10	**WorldCorp** (air transportation)	$5.88	$13.25	–	126%	Recapitalization
11	**Stride Rite** (footwear)	$13.38	$28.88	$0.35	119%	Market leader; takeover speculation
12	**Adobe Resources** (oil, gas)	$6.75	$14.62	–	117%	Rising gas prices
13	**Craig** (supermarkets)	$8.25	$17.75	–	115%	Rapid earnings growth
14	**Mattel** (toys)	$9.50	$19.75	–	108%	Revitalized popular toys
15	**Charles Schwab** (discount broker)	$6.75	$13.88	$0.09	107%	Rising brokerage commissions
16	**Crompton & Knowles** (chemicals)	$15.31	$30.75	$0.58	106%	Sales of dyes up sharply
17	**Lydall** (fiber manufacturer)	$15.25	$31.38	–	106%	Restructuring
18	**Tyler** (diversified manufacturer)	$6.38	$8.62	$4.91	106%	Restructuring
19	**Edison Brothers Stores** (retailing)	$32.25	$63.50	$1.80	105%	Restructuring
20	**Federal National Mortgage Assoc.** (financial)	$16.92	$33.88	$0.43	103%	Beneficiary of S&L bailout bill
21	**Centel** (telecommunications)	$33.50	$64.50	$2.24	100%	Increase in cellular phone subscribers
22	**Kemper** (financial services)	$24.00	$47.00	$0.81	100%	Restructuring
23	**Rowan** (oil, gas)	$5.75	$111.25	–	96%	Rising oil prices
24	**Avon Products** (cosmetics, health)	$19.50	$36.88	$1.00	95%	Takeover speculation
25	**On-Line Software International** (software)	$5.00	$9.75	–	95%	Successful new sales campaign
26	**Tidewater** (oil services)	$7.38	$14.38	–	95%	Industry upswing
27	**Flightsafety International** (pilot training)	$24.75	$47.88	$0.17	94%	Strong demand for services
28	**American Barrick Resources** (gold)	$16.38	$31.63	$0.13	94%	Increased production; rising gold prices
29	**Franklin Resources** (financial services)	$22.50	$42.88	$0.44	93%	Growing asset base
30	**Circus Circus Enterprises** (hotel, gaming)	$29.12	$56.00	–	92%	A new gaming resort in Las Vegas
31	**Mark IV Industries** (industrial products)	$7.33	$14.00	–	91%	Acquisitions; debt reduction
32	**Campbell Soup** (food)	$31.50	$58.62	$0.92	90%	Takeover speculation
33	**Torchmark** (financial services)	$30.50	$55.75	$1.25	89%	Restructuring
34	**Wellman** (fibers, resins)	$18.75	$35.12	$0.12	88%	Low-cost producer; strong sales
35	**Hancock Fabrics** (fabric retailing)	$18.50	$34.00	$0.46	87%	Strong sales growth
36	**UniFirst** (uniform rentals)	$12.88	$23.88	$0.10	87%	Cost reduction; improved demand
37	**Baker Hughes** (oil service)	$14.00	$25.50	$0.46	87%	Industry upswing
38	**Banner Industries "A"** (diversified)	$8.19	$15.12	–	85%	Bought Fairchild Industries
39	**Berkshire Hathaway** (diversified)	$4,700	$8,675	–	85%	Huge gain in net worth
40	**National Medical Enterprises** (rehab centers)	$21.50	$38.75	$0.70	84%	More patients using its services
41	**Healthsouth Rehabilitation** (rehab centers)	$9.38	$17.25	–	84%	Strong earnings growth; acquisitions
42	**Daniel Industries** (meter manufacturer)	$8.62	$15.62	$0.18	84%	Rising demand for gas meters
43	**Southwestern Energy** (oil, gas)	$18.00	$32.25	$0.56	83%	Increased production; industry upswing
44	**Associated Natural Gas** (gas)	$11.25	$20.62	–	83%	Rising gas prices
45	**Lewis Galoob Toys** (toys)	$6.50	$11.88	–	83%	Expanded product line; strong sales
46	**AVX** (electronics)	$17.00	$30.62	$0.24	83%	Acquisition by Japan's Kyocera
47	**Scientific-Atlanta** (cable and satellite equipment)	$13.12	$23.75	$0.14	82%	Growth in cable TV business
48	**UNUM** (financial services)	$27.00	$48.00	$0.57	81%	Recent acquisitions; strong earnings
49	**Humana** (hospital)	$25.38	$44.00	$0.98	79%	Rising admissions
50	**NACCO Industries** (diversified manufacturer)	$31.50	$55.50	$0.58	78%	Bought a leading forklift maker

AMERICAN EXCHANGE
THE 25 BEST

		STOCK PRICE 12/31		DIVIDENDS PER SHARE	TOTAL RETURN TO INVESTORS	COMMENTS
		1988	1989			
1	**Central Pacific Corp** (bank)	$7.50	$26.88	$0.01	258%	Merger with Wells Fargo
2	**Graham** (machinery, equipment)	$7.12	$24.50	$0.10	245%	Restructuring
3	**Keane** (software consulting)	$6.75	$21.50	–	219%	Successful acquisition strategy
4	**Turner Broadcasting "A"** (cable-TV programs)	$16.88	$51.00	–	202%	Earnings turnaround
5	**Old Spaghetti Warehouse** (restaurants)	$6.00	$17.88	–	198%	Earnings turnaround
6	**Stevens Graphics "A"** (equipment manufacturer)	$7.00	$18.25	–	161%	Strong sales and earnings growth
7	**Leo's Industries** (electronics retailer)	$5.06	$13.00	–	157%	Success in cellular-phone sales
8	**Oneita Industries** (apparel)	$5.00	$12.25	–	145%	Increased market share
9	**Sotheby's Holdings** (auction house)	$10.06	$23.50	$0.61	144%	Booming art market
10	**Imperial Holly** (sugar refiner and processor)	$11.67	$27.50	$0.42	141%	Rising sugar prices
11	**American Fructose "A"** (food)	$9.50	$22.75	$0.06	140%	Price increases took hold
12	**Barnwell Industries** (oil, water, real estate)	$14.62	$34.62	$0.25	139%	Valuable Hawaiian land holdings
13	**Fruit of the Loom** (apparel)	$6.38	$14.88	–	133%	Rising sales of active wear
14	**Pacific Western Bancshares** (bank)	$5.38	$11.75	$0.15	123%	Earnings turnaround; acquisition
15	**Michael Baker** (engineering)	$8.12	$17.50	–	115%	Beneficiary of national infrastructure renewal
16	**FirstFed America** (savings and loan)	$15.50	$33.25	–	115%	Being taken over by Bancorp Hawaii
17	**Sierracin** (aerospace products)	$6.50	$13.88	–	113%	An LBO in progress
18	**Nichols Institute** (medical diagnostic testing)	$5.89	$12.50	–	112%	Strong demand for lab tests
19	**Cash America Investments** (pawnshops)	$10.88	$22.62	$0.12	110%	Investor play on recession fears
20	**CVB Financial** (bank)	$10.80	$22.38	–	107%	A hot California bank
21	**Selas Corp of America** (capital goods)	$8.25	$17.00	–	106%	Higher sales to steel industry
22	**Vermont American** (power-tool accessories)	$19.89	$40.00	$0.28	103%	Takeover by U.S.-W. German joint venture
23	**Entertainment Publishing** (discount coupons)	$8.62	$17.38	–	101%	Recapitalization; revenue growth
24	**Lynch** (miniconglomerate)	$13.12	$26.25	$0.05	101%	Acquisitions boost earnings
25	**La Jolla Bancorp** (bank)	$6.78	$13.38	$0.10	99%	Planned merger with Security Pacific

AMERICAN EXCHANGE
THE 5 WORST

		STOCK PRICE 12/31		DIVIDENDS PER SHARE	TOTAL RETURN TO INVESTORS	COMMENTS
		1988	1989			
1	**Manufactured Homes** (mobile homes)	$6.25	$0.56	–	-91%	Slump in sales
2	**CenTrust Savings Bank Miami** (savings & loan)	$5.75	$0.56	–	-90%	Omitted its dividend
3	**Comfed Bancorp** (bank)	$5.25	$1.38	$0.06	-73%	Losses on real estate loans
4	**Compudyne** (electronics)	$8.50	$2.38	–	-72%	Lost money on military contracts
5	**Enviropact** (environmental consulting)	$6.12	$1.75	–	-71%	Reported an unexpected loss in 1989

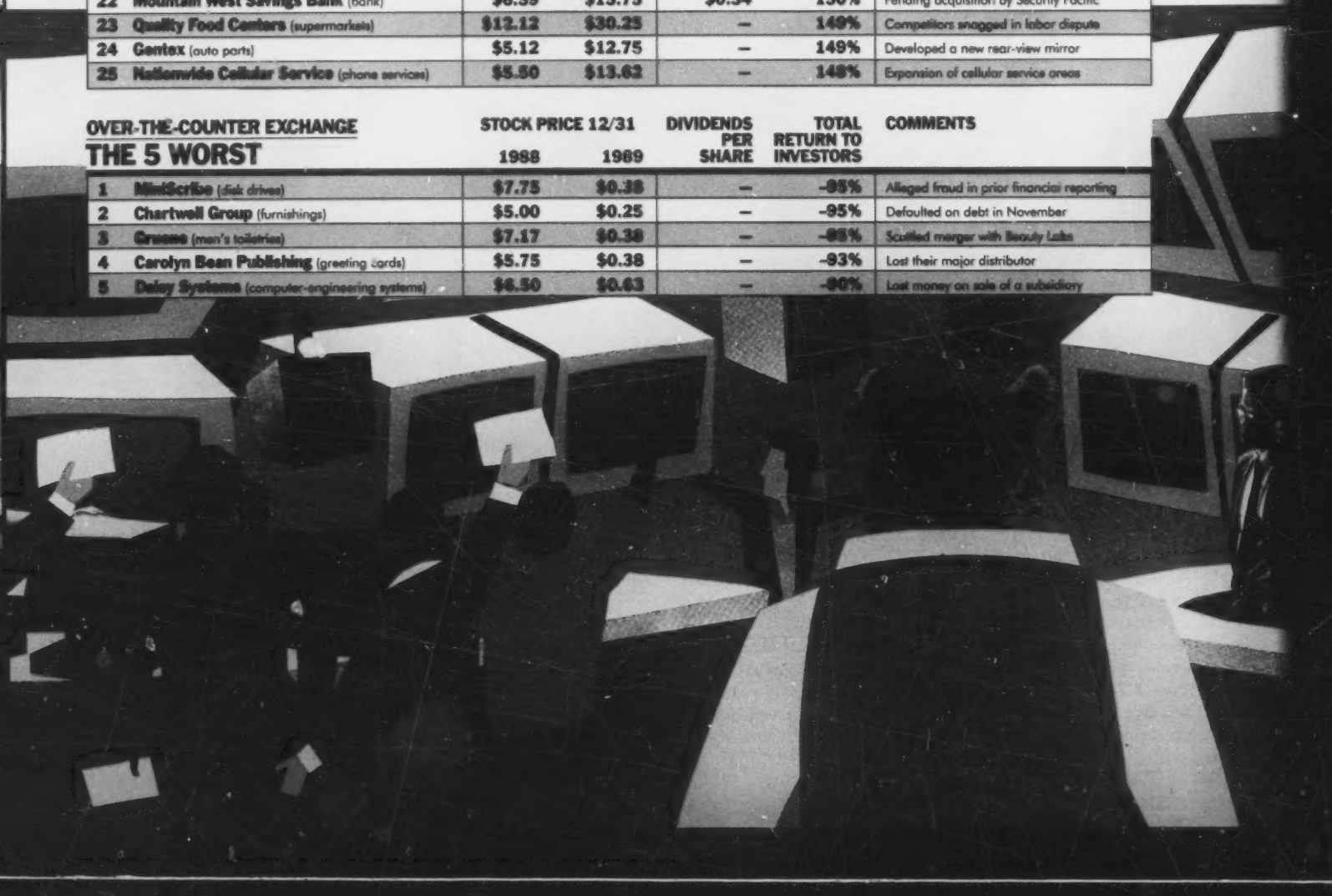


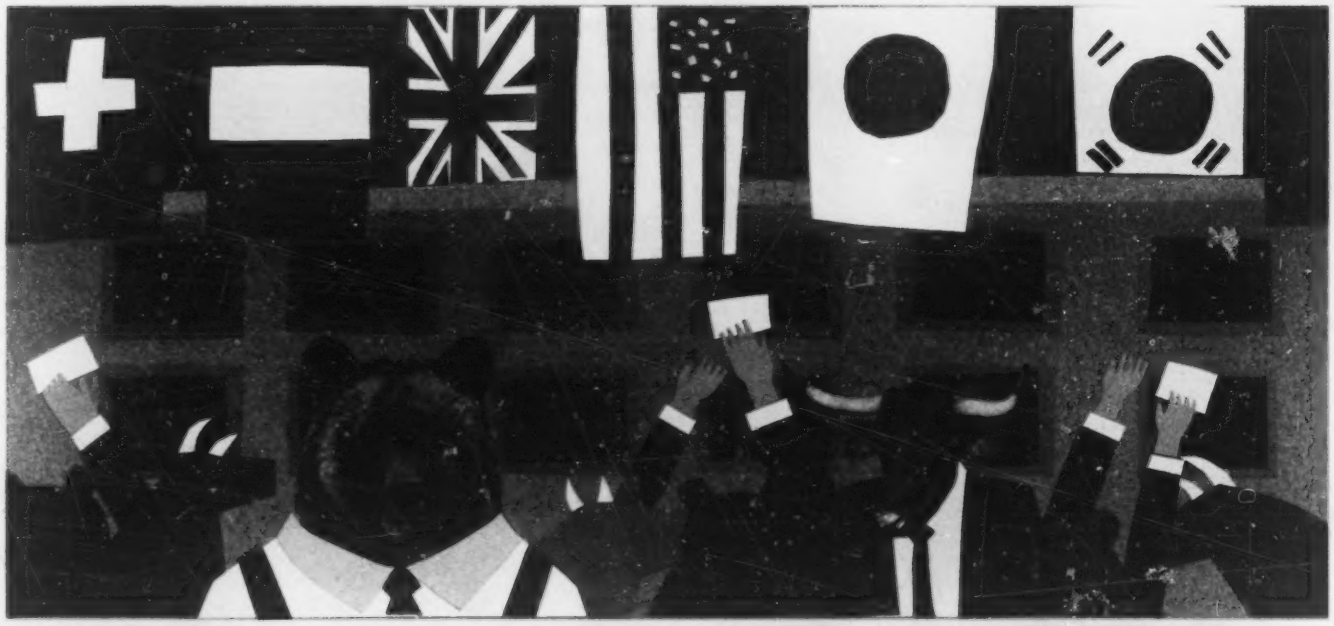
OVER-THE-COUNTER EXCHANGE
THE 25 BEST

		STOCK PRICE 12/31		DIVIDENDS PER SHARE	TOTAL RETURN TO INVESTORS	COMMENTS
		1988	1989			
1	**Energy Ventures** (oil, gas)	$8.00	$52.75	–	559%	Industry upswing: new gas wells
2	**Pacificare Health Systems** (health services)	$6.12	$25.50	–	316%	A fast growing HMO
3	**Vivigen** (medical diagnostic tests)	$6.00	$22.00	–	267%	Strong demand for prenatal tests
4	**Intercontinental Life** (insurance)	$9.50	$33.75	–	255%	Successful acquisitions
5	**SciMed Life Systems** (surgical devices)	$7.06	$24.50	–	247%	New products are well received
6	**FHP International** (health services)	$6.06	$20.75	–	242%	A fast growing HMO
7	**NovaCare** (health services)	$5.12	$16.50	–	222%	Strong earnings growth
8	**Production Operators** (oil services)	$5.38	$16.88	$0.16	220%	Oil industry upswing
9	**Savannah Foods & Industries** (sugar)	$18.38	$55.00	$0.59	204%	Rising sugar prices
10	**Software Toolworks** (software)	$5.00	$14.88	–	198%	Fast selling new computer programs
11	**Petroleum Helicopters** (oil services)	$9.12	$26.75	$0.08	195%	Improved prospects for drilling activity
12	**Diagnostek** (medical services)	$5.62	$15.25	–	171%	Winning idea: a mail-order pharmacy
13	**Millicom** (telecommunications)	$8.38	$22.25	–	166%	A rapidly growing cellular phone business
14	**3-D Systems** (machinery manufacturer)	$5.84	$15.38	–	163%	Reported first profits in 1989
15	**Surgical Care Affiliates** (outpatient health care)	$7.33	$19.25	$0.02	163%	New mini-hospitals are a hit
16	**Imagine Films Entertainment** (movie studio)	$5.75	$15.00	–	161%	Successful films, including *Parenthood*
17	**DH Technology** (electronics)	$5.62	$14.62	–	160%	Market share and earnings growth
18	**Occupational-Urgent Care** (cost containment)	$7.12	$18.38	–	158%	More companies trying to lower health costs
19	**Northwestern States Portland Cement**	$8.25	$21.25	–	158%	A pending takeover by Dundee Cement
20	**Gulf Applied Technologies** (oil, gas)	$6.00	$15.25	–	154%	Owns 27% of Energy Ventures (see No. 1)
21	**InterVoice** (telephone services)	$10.62	$26.62	–	151%	Growth of interactive phone services
22	**Mountain West Savings Bank** (bank)	$6.59	$15.75	$0.34	150%	Pending acquisition by Security Pacific
23	**Quality Food Centers** (supermarkets)	$12.12	$30.25	–	149%	Competitors snagged in labor dispute
24	**Gentex** (auto parts)	$5.12	$12.75	–	149%	Developed a new rear-view mirror
25	**Nationwide Cellular Service** (phone services)	$5.50	$13.62	–	148%	Expansion of cellular service areas

OVER-THE-COUNTER EXCHANGE
THE 5 WORST

		STOCK PRICE 12/31		DIVIDENDS PER SHARE	TOTAL RETURN TO INVESTORS	COMMENTS
		1988	1989			
1	**MiniScribe** (disk drives)	$7.75	$0.38	–	-95%	Alleged fraud in prior financial reporting
2	**Chartwell Group** (furnishings)	$5.00	$0.25	–	-95%	Defaulted on debt in November
3	**Greune** (men's toiletries)	$7.17	$0.38	–	-95%	Scuttled merger with Beauty Labs
4	**Carolyn Bean Publishing** (greeting cards)	$5.75	$0.38	–	-93%	Lost their major distributor
5	**Daisy Systems** (computer-engineering systems)	$6.50	$0.63	–	-90%	Lost money on sale of a subsidiary





A BANNER YEAR FOR THE WORLD'S MARKETS

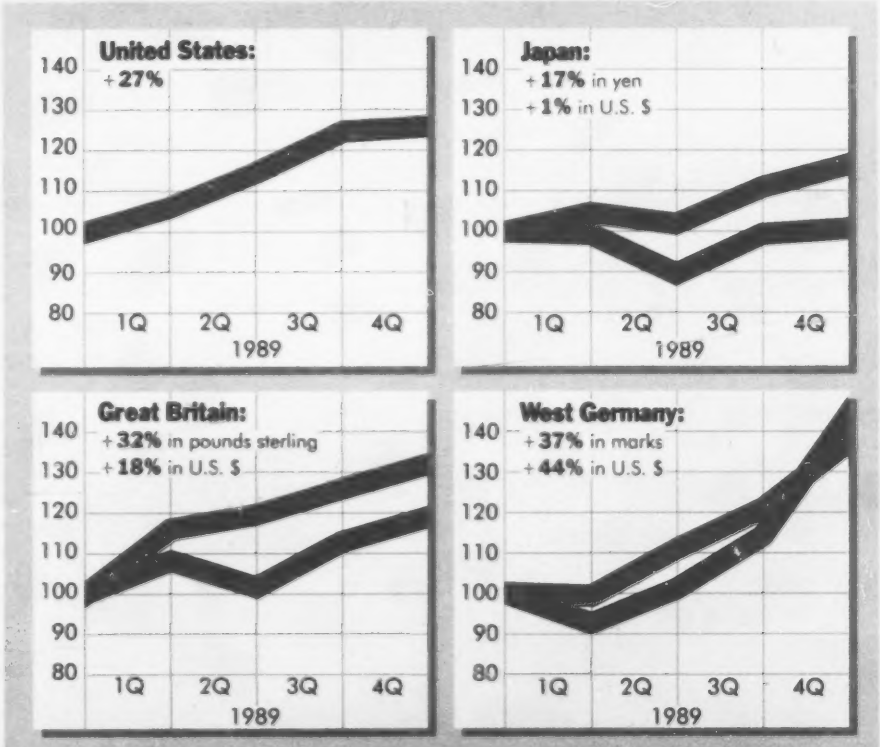
The bull went globe-trotting in 1989. Spurred by another year of economic growth and financial liberalization, the world's stock markets rose 22% on average, an unusually good run by any measure.

Of course, a few market gains were illusory, such as Argentina's staggering 18,000% rise, a byproduct of hyperinflation. But most markets were on surer ground, and analysts see opportunities for further gains in 1990.

Mexico's market led the way with a 112% jump. That's no fluke. Business people and investors were surprised by the strength of Mexico's economic recovery. Many expect more good news after renegotiation of the country's $50 billion external debt.

Austria delivered Europe's winning performance, with a 92% rise in its stock index. Largely because of investor excitement over the prospects for rebuilding Eastern Europe, four of the five best-performing stocks in the world are Austrian construction companies. West Germany's market has also drawn investor attention, rising 22% since the Berlin Wall opened in November.

Exchange rate fluctuations accounted for gaps between local currency and the dollar-converted performance of some markets. A weaker yen turned Japan's 17% advance into a 1% gain for U.S. investors. Conversely, a climbing Taiwan dollar provided an extra dollop of profits for Americans. F



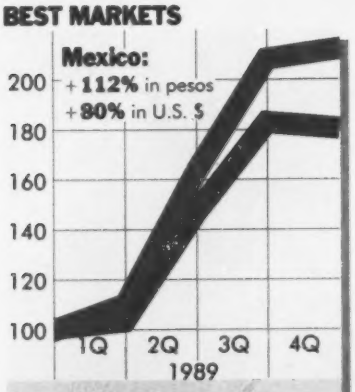
THE BIGGEST MARKETS WERE ALSO SOME OF THE BEST

The opening of the Eastern bloc propelled West German stocks to a 37% rise, beating other major markets. Takeover fever pushed British shares to new heights, while the U.S. market overcame recession jitters to post a 27% gain. Japan's bull showed no signs of tiring, up 17%.

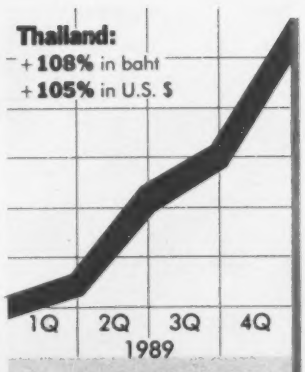
Index: 4th qtr. 1988 = 100

SOURCE: MORGAN STANLEY CAPITAL INTERNATIONAL

BEST MARKETS

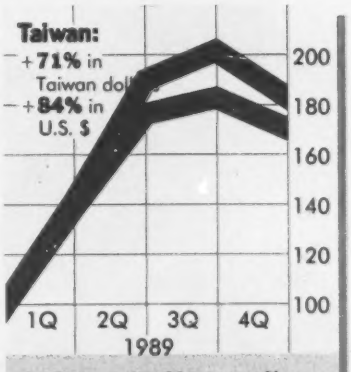


Debt renegotiation and rising oil prices fueled a doubling of Mexico's bourse. Best route in for individuals is the Mexico Fund.

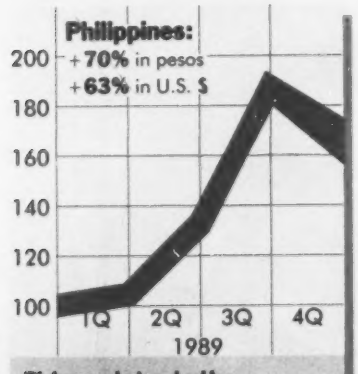


Though long undervalued, this market's steep rise worries analysts. The Thai Fund trades on the NYSE.

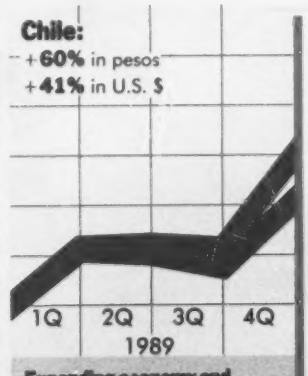
A beneficiary of improved East-West trade. Analysts remain bullish. The Austria Fund is listed on the NYSE.



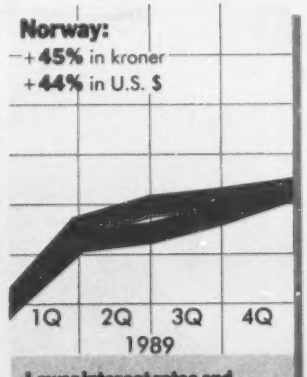
A roller-coaster ride powered by rampant speculation. Analysts advise caution. For danger seekers, there's the Taiwan Fund.



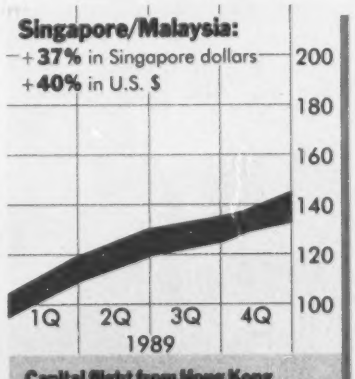
Rising market rocked by attempted coup. Political risks remain high. The First Philippine Fund just listed on the NYSE.



Expanding economy and move to democracy buoyed market's prospects. The only way in: the Chile Fund.



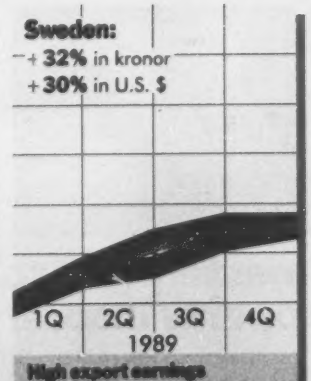
Lower interest rates and higher oil prices lifted the market. No mutual fund, but ADRs are available.



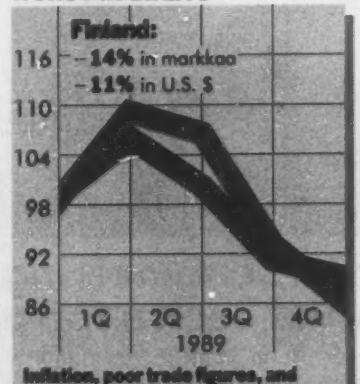
Capital flight from Hong Kong found its way to Singapore/ Malaysia, boosting stock prices. The Malaysia Fund is on the NYSE.

WORST MARKETS

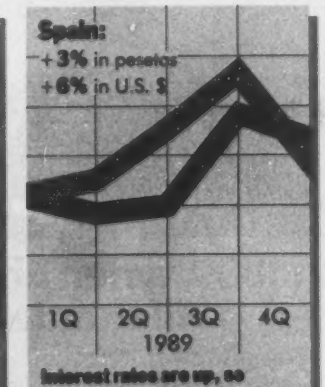
Merger activity and lots of spare cash drove Danish stocks higher, but bulls remain scarce. No mutual fund, but ADRs exist.



High export earnings helped lift stocks. Analysts are cautious. Many ADRs trade on U.S. exchanges.



Inflation, poor trade figures, and a glut of new stock issues felled the Finnish market. There's no mutual fund for Finnish stocks.



Interest rates are up, so market was sagged. The Spain Fund offers a way in but sells at a stiff premium.

Index: 4th qtr. 1988 = 100

SOURCE: MORGAN STANLEY CAPITAL INTERNATIONAL

WARY HOPE ON EASTERN EUROPE

America's top corporate chiefs think the outbreak of freedom will make the region a promising market. But they worry about whether the changes will endure. ■ *by Mark Alpert*

AMERICAN chief executives, like most of their compatriots, have elatedly watched the spirit of freedom steamroll through Eastern Europe, toppling hard-line Communist regimes as if they were made of matchsticks. After witnessing the astounding events in East Germany, Poland, Czechoslovakia, and Hungary, most CEOs now believe that the 140 million people of Eastern Europe (not counting the Soviets) will eventually join the global economy and become a major new market for U.S. exporters. But along with the widespread optimism, the CEOs have grave concerns: Many wonder whether the new non-Communist leaders of Eastern Europe will be able to retain power as their people face the inevitable hardships that will precede the benefits of free markets. Several CEOs question whether those leaders have the managerial skills they will need. Others fear that the Iron Curtain will come crashing back down.

"The bear hasn't been totally defanged."

KIRK THOMPSON
J.B. Hunt Transport

These views come to light in the latest FORTUNE 500 CEO Poll. The opinion research firm of Clark Martire & Bartolomeo interviewed 205 CEOs of FORTUNE 500 and Service 500 companies between December 5 and December 13. During that week a government with a non-Communist majority took over in Czechoslovakia, and the East German government agreed to hold free elections in the spring.

Two-thirds of the CEOs interviewed believe Eastern Europe will emerge as a major new market within the next 20 years. The chief executives say East Germany has the greatest economic potential—half of them ranked it as the most promising Eastern European country for U.S. companies. Next-best bets in order: Hungary, Poland, and Czechoslovakia. Rumania was deemed least promising, though the interviews were conducted two weeks before Rumanian dictator Nicolae Ceausescu was deposed and executed. The chiefs considered Albania and Bulgaria scarcely better. CEOs whose companies are involved in international trade—73% of those interviewed—are also determined to improve their ties with the Soviet Union. Two-thirds say they expect to do more business with the U.S.S.R. in the next two years.

Q A **Which countries in Eastern Europe do you consider most and least promising as places for U.S. companies to do business?**

	Most promising	Least promising
East Germany	50%	*
Hungary	22%	3%
Poland	16%	4%
Czechoslovakia	7%	4%
Yugoslavia	–	3%
Bulgaria	–	20%
Albania	–	23%
Rumania	–	36%

*Less than 0.5%.

Q A **Do you see Eastern Europe as a major new market comparable in importance to Western Europe within 20 years?**

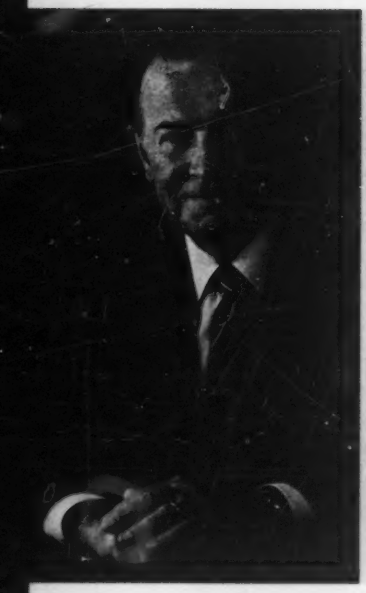
Yes	67%
No	29%
Not sure	4%

"Unification of Germany could lead to the rise of another unfriendly nation."

JOSEPH D. WILLIAMS
Warner-Lambert

Although CEOs are generally hopeful about Eastern Europe's long-term prospects, business people like stability, and they don't see it there yet. "The risk is that the management structure of countries could deteriorate, creating economic chaos," says David Swanson, chief executive officer of Central Soya, the grain exporter and food processor. "If that results, who knows what crazies could arrive on the scene?" Alexander Giacco of plastics manufacturer Himont cites another obstacle to doing business in Eastern Europe: "I'm not sure who's in charge. People running around with no one in charge is what I consider anarchy."

When asked what worries them most about recent events in Eastern Europe, the word used time and again by the CEOs is



"There has been too much change too soon."

WILLIAM O. BOURKE
Reynolds Metals

"backlash." A full one-quarter of the chief executives fear that hard-line Communists will return to power if the reformers try to push change too quickly. Several warn that China's brutal crackdown at Tiananmen Square could be replayed in the streets of Prague or Warsaw. "There has been too much change too soon," says William O. Bourke, CEO of Reynolds Metals. "The hard-liners of the Communist Party could be, and probably are, instinctively trying to protect their turf."

CEOs fear particularly for the political future of Mikhail Gorbachev. Says George P. Mitchell, chief of Mitchell Energy & Development: "We have to do everything we can to help Gorbachev and to help these countries get through. Bush doesn't have to listen to the hawks all the time."

Other chief executives worry that the restive peoples of Eastern Europe will become disenchanted with the new, non-Communist governments if they don't see immediate improvements in economic conditions—and the odds are that they won't. "All of a sudden they'll wake up one morning with no bread on the table and no car to drive," says John B. Smith of Mayflower Group, the moving and storage company. "The fact that freedom hasn't been an instant benefit economically may be very disillusioning." Observes Halliburton's Thomas H. Cruikshank: "The expectations of people can be high, but their patience is sometimes low, and there are no overnight remedies. Economically, things will get worse before they get better."

Some of the chiefs believe Eastern Europe's new leaders, a mixed bag of intellectuals—poets, playwrights, journalists, and dissidents—lack the management skills to guide their countries through the current turmoil. Vincent A. Sarni, chief of PPG Industries, worries about "a completely new leadership who have no experience in leading." Says Howard C. Humphrey of Franklin Life Insurance: "It will take them some time to gain the governing experience."

Q A **Do you think the U.S. should be spending less on defense by the beginning of 1993?**

Yes	93%
No	7%

Q A **If yes, by how much do you think the annual defense budget should be reduced by 1993?**

Under $30 billion	16%
$30-$60 billion	39%
$60-$90 billion	21%
Over $90 billion	16%
Don't know	8%

CEOs are divided over how much aid—if any—the U.S. should offer the new governments. Some advocate a massive infusion, while others argue fiercely against it. "It's like the end of a war," says Jack W. Corn of Quaker State. "They need a Marshall Plan arrangement. The Western countries must lend a hand to preserve the new freedoms in Eastern Europe." But W. R. Wilson of Lukens, the steelmaker, believes that getting these nations hooked on American economic aid would be the worst thing to do: "Western Europe still has a Marshall Plan mentality. What will we throw away this time?"

Q A **Do you believe your company will conduct more trade with the U.S.S.R., as either a buyer or a seller, in the next two years?**

Yes	68%
No	32%

Nearly all the CEOs—93%—agree that the U.S. should reduce defense spending by the beginning of 1993 to reflect the improvement of relations with the Soviet Union. Of those who advocate defense cuts, 37% say the military's annual budget of $300 billion should be reduced by more than $60 billion. Another 39% say it should be trimmed by $30 billion to $60 billion, while 16% say the reduction in annual expenditures should be less than $30 billion.

For the case against wholesale cuts, listen to Kirk Thompson, CEO of J.B. Hunt Transport Services: "It gives the world a false sense of security to think that Eastern Europe is going to become just another friendly nation like Britain. Although politically and philosophically we're closer now, there's still a distance. The bear hasn't been totally defanged." John Pearson of Northwestern National Life Insurance agrees: "While what's happening is wonderful, we ought to keep our guard up."

A few CEOs worry about the possible reunification of Germany. Warner-Lambert's Joseph D. Williams speaks for them when he says, "My concern, having been in World War II, is that unification of East and West could lead to the rise of another unfriendly nation." Russell Hanlin Sr. of Sunkist Growers figures that, good or bad, such an event isn't imminent: "It's a long way between the first hole in the Berlin Wall and the reunification of the Germanies."

But several CEOs are so thrilled by the changes in Eastern Europe that they overlook the dangers for now. "I can't see how anything but good can come from freedom," says Robert G. Sharp, CEO of Keystone Provident Life Insurance. Tyco Laboratories chief John F. Fort exults, "Things have gone too far to be reversed. The pendulum has swung too far for freedom not to be embraced." F

"The Western countries must lend a hand in Eastern Europe."

JACK W. CORN
Quaker State

Corporate matrimony and the RJR buyout led to new records in the size of mergers—and the matchmakers' fees. Then suddenly the LBO party fizzled. ■ *by Christopher Knowlton*

IN 1989's TOPSY-TURVY marketplace for mergers, weddings came in and leveraged takeovers went out. All year long investment bankers played matchmaker and chaperon, pairing up like-minded corporate giants in related industries. Mammoth deals in pharmaceuticals, media, and food helped set a new record of $144 billion for the combined value of FORTUNE's list of the 50 largest acquisitions, mergers, public offerings, and recapitalizations. Most were friendly or formal. Even so, the year had its share of shotgun marriages, Las Vegas elopements, and occasional caveman courtships, where the company in question was clubbed on the head and dragged away by the hair.

The real news: The bull market in leveraged buyouts is over. The year that brought the hippopotamus of LBOs—Kohlberg Kravis Roberts's $25 billion takeover of RJR Nabisco (No. 1)—also saw the crumbling of the junk bond market, the tottering of the Campeau retail castle, and the rise of recession paranoia. Oh, there were LBOs to write home about—eight in our list of 50. But by midyear junk deals were popping like stink bombs, and at the rehearsal dinner for the UAL deal in October, lenders walked out holding their noses. By year-end most corporate raiders and LBO firms were lying low, unable to raise the financing they needed to complete big buyouts. Says Stephen Schwarzman, president of the Blackstone Group: "When we look back on 1989, it will be the year the LBO party ended."

Two guiding principles led the way toward mega-marriages: bigness and synergy.

For bigness consider the drug mergers. Bristol-Myers paid a hefty $12.7 billion to hitch with Squibb, and London's Beecham Group merged with SmithKline Beckman in a deal valued at $8.3 billion. By consolidating their costly research and development spending, combining their manufacturing, and merging their sales forces, these drug companies expect to increase revenues and reduce costs, which will help them beat competitors worldwide.

Time Inc. (owner of FORTUNE's publisher) courted Warner Communications, recognizing that their publishing, broadcasting, and entertainment businesses fit together like spoons. The two waltzed toward wedlock until Martin Davis, chief of Paramount Communications, cut in with a bid—for Time—of his own. Time responded by switching from a merger plan to an outright acquisition of Warner. The Delaware courts upheld Time's argument that the acquisition was in the company's strategic best interests, a decision hailed as a lift for corporate managers and a blow to raiders. The first part of the deal, in which Time bought just over half the stock for cash and gained control of Warner last year, is fourth on our list. The second part, which involves an exchange of the remaining Warner shares for new Time Warner securities, is valued at $7 billion and was scheduled to be completed on January 10.

Paramount, meanwhile, added to its war chest by selling its finance subsidiary, Associates First Capital. Ford Motor bought the business for $3.35 billion (No. 13). Sony liked what it saw in Columbia Pictures Entertainment and spent $3.4 billion to buy Coca-Cola's shares and those of other lucky stakeholders in the most expensive Japanese acquisition in the U.S. to date (No. 12).

Dealmakers took home a record $1.3 billion in fees. The RJR deal alone generated $203 million for the LBO's seven advisers. Some dealmakers were lucky enough to grab a double scoop of profits. Allen & Co. collected $30 million for advising Columbia Pictures on its acquisition by Sony. The firm also owned 3% of Columbia Pictures stock, which rose 28% as word of the takeover spread.

What will it take to bring the LBO firms and the raiders back in force? Answer: the unlikely confluence of a strong economy, lower interest rates, and a sharply lower stock market—which would make it easier to buy control of a company. "The LBO market will come back, but it is hard to see it coming back in 1990 to the level it had in 1988 or early 1989," says Morgan Stanley merger chief Eric Gleacher.

WITH FEWER RAIDERS lurking in Wall Street alleyways, U.S. corporations have a unique opportunity to make more smart deals. Since more acquirers are likely to be public companies, there will be higher interest in deals that keep acquisition-related goodwill charges from depressing earnings. One way is through a pooling-of-interests merger. Stock of the seller is swapped for that of the buyer. Or a fresh issue is created for newly merged operations, much as was done in the Marion Labs–Merrell Dow Pharmaceuticals deal (No. 10). Look, also, for more cross-border and transatlantic deals as Europe approaches 1992. To the degree they reflect such clever corporate strategies and deploy more investment-grade debt, the 1990s' newlywed deals will survive as happy, lasting marriages.

REPORTER ASSOCIATE *Laurie Kretchmar*

ILLUSTRATIONS BY PETER SPACEK

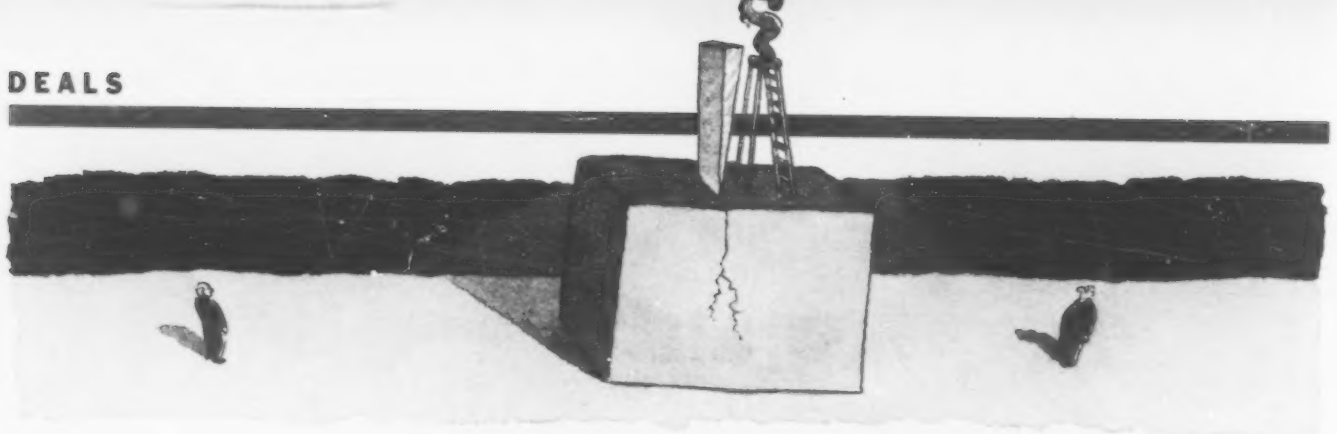
RANK	VALUE (000) % of book value	TRANSACTION	FINANCIAL INTERMEDIARIES (Client)	FEE (000)	FEE as % of deal
1 **RJR HOLDINGS[1] acquires RJR NABISCO (tobacco, food, beverages)**	**$25,071,000** 440%	**Leveraged buyout for cash, preferred stock, and convertible debentures, April 28**	KOHLBERG KRAVIS ROBERTS	**$75,000**	.30%
			DREXEL BURNHAM LAMBERT	**$25,000**	.10%
			MERRILL LYNCH	**$25,000**	.10%
			MORGAN STANLEY	**$25,000**	.10%
			WASSERSTEIN PERELLA (RJR Holdings)	**$25,000**	.10%
			DILLON READ	**$14,000**	.06%
			LAZARD FRÈRES (RJR Nabisco)	**$14,000**	.06%
2 **BRISTOL-MYERS (pharmaceuticals) acquires SQUIBB (pharmaceuticals) and changes name to BRISTOL-MYERS SQUIBB**	**$12,656,271** 852%	**Acquisition for stock, October 4**	GOLDMAN SACHS	**$25,000**	.20%
			SHEARSON LEHMAN HUTTON (Bristol-Myers)	**$3,500**	.03%
			MORGAN STANLEY (Squibb)	**$23,900**	.19%
3 **BEECHAM GROUP and SMITHKLINE BECKMAN (pharmaceuticals companies) merge to form SMITHKLINE BEECHAM**	**$8,253,000** 519%	**Merger by exchange of stock, July 26**	KLEINWORT BENSON	**N.A.**	—
			WASSERSTEIN PERELLA (Beecham Group)	**N.A.**	—
			GOLDMAN SACHS	**$15,000**	.18%
			J.P. MORGAN (SmithKline Beckman)	**$15,000**	.18%
4 **TIME (broadcasting, publishing) acquires 50.6% of WARNER COMMUNICATIONS (entertainment, broadcasting, publishing)**	**$7,000,000** 656%	**Cash tender offer July 24 as part of a $14 billion acquisition due to close January 1990**	MERRILL LYNCH	**$1,500**	.01%
			SHEARSON LEHMAN HUTTON	**$16,000**	.11%
			WASSERSTEIN PERELLA (Time)	**$16,000**	.11%
			ALPINE CAPITAL GROUP	**$6,000**	.04%
			GOLDMAN SACHS	**$1,000**	.007%
			LAZARD FRÈRES	**$20,000**	.14%
			MERRILL LYNCH (Warner Communications)	**$1,000**	.007%
5 **GRAND METROPOLITAN (British beverage and food company) acquires PILLSBURY (restaurants, food)**	**$5,757,917** 430%	**Acquisition for cash, January 9**	MORGAN STANLEY	**$14,200**	.25%
			S.G. WARBURG (Grand Metropolitan)	**$7,100**	.12%
			DREXEL BURNHAM LAMBERT	**$10,000**	.17%
			FIRST BOSTON	**$10,000**	.17%
			KLEINWORT BENSON	**$1,000**	.02%
			SHEARSON LEHMAN HUTTON	**$10,000**	.17%
			WASSERSTEIN PERELLA (Pillsbury)	**$10,000**	.17%
6 **IMPERIAL OIL (70% owned by EXXON) acquires TEXACO CANADA (78% owned by TEXACO)**	**$4,149,595** 250%	**Acquisition for cash and stock, February 28**	FIRST BOSTON	**$100**	.002%
			GORDON CAPITAL (Imperial Oil)	**$6,672**	.16%
			MORGAN STANLEY	**N.A.**	—
			SCOTIA MCLEOD	**N.A.**	—
			WASSERSTEIN PERELLA (Texaco)	**N.A.**	—
7 **TENNESSEE VALLEY AUTHORITY (federal corporation) sells bonds**	**$3,929,790**	**Offering of bonds as part of a refinancing plan, October 17**	FIRST BOSTON* GOLDMAN SACHS MERRILL LYNCH MORGAN STANLEY SALOMON BROTHERS	**$24,000**	.61%

Mergers and acquisitions

Securities offerings

N.A. Not available.
* Lead manager.
[1] Group led by Kohlberg Kravis Roberts.

THIS LIST WAS COMPILED BY REPORTER ASSOCIATE KATHLEEN CARROLL SMYTH.



RANK		VALUE (000) % of book value	TRANSACTION	FINANCIAL INTERMEDIARIES (Client)	FEE (000)	FEE as % of deal
8	**HCA-HOSPITAL CORP. OF AMERICA[2] acquires HOSPITAL CORP. OF AMERICA**	**$3,905,000** 241%	**Leveraged buyout for cash, stock, and debentures, March 16**	MORGAN GUARANTY TRUST (HCA-Hospital Corp. of America)	**$50,000**	1.28%
				MORGAN STANLEY (Hospital Corp. of America)	**$8,000**	.20%
9	**TENNESSEE VALLEY AUTHORITY (federal corporation) sells bonds**	**$3,889,250**	**Offering of bonds to complete refinancing plan, November 17**	MORGAN STANLEY* FIRST BOSTON GOLDMAN SACHS MERRILL LYNCH SALOMON BROTHERS SHEARSON LEHMAN HUTTON	**$24,250**	.62%
10	**DOW CHEMICAL acquires 67% of MARION LABORATORIES (pharmaceuticals)**	**$3,800,000** 996%	**Cash tender and merger of Marion Laboratories and Merrell Dow Pharmaceuticals to form Marion Merrell Dow, December 2**	MORGAN STANLEY (Dow Chemical))	**$16,000**	.42%
				SHEARSON LEHMAN HUTTON (Marion Laboratories)	**$17,000**	.45%
11	**WINGS HOLDINGS[3] acquires NWA (airlines)**	**$3,650,000** 222%	**Leveraged buyout for cash, August 4**	BANKERS TRUST	**$10,000**	.27%
				SMITH BARNEY HARRIS UPHAM	**N.A.**	—
				WASSERSTEIN PERELLA (Wings Holdings)	**$10,000**	.27%
				FIRST BOSTON (NWA)	**$14,140**	.39%
12	**SONY (electronic equipment) acquires COLUMBIA PICTURES ENTERTAINMENT (movies, TV production and distribution)**	**$3,400,000** 320%	**Acquisition for cash, November 6**	BLACKSTONE GROUP (Sony)	**$9,900**	.29%
				ALLEN & CO. (Columbia Pictures Entertainment)	**$30,000**	.88%
13	**FORD MOTOR acquires ASSOCIATES FIRST CAPITAL (finance company) from PARAMOUNT COMMUNICATIONS (entertainment)**	**$3,350,000** N.A.	**Acquisition for cash, October 31**	GOLDMAN SACHS	**N.A.**	—
				SHEARSON LEHMAN HUTTON (Ford Motor)	**N.A.**	—
				LAZARD FRÈRES	**N.A.**	—
				MORGAN STANLEY (Paramount Communications)	**N.A.**	—
14	**PANHANDLE EASTERN (gas, oil) acquires TEXAS EASTERN (gas, oil)**	**$3,223,799** 199%	**Acquisition for cash and stock, June 28**	KIDDER PEABODY (Panhandle Eastern)	**$14,500**	.45%
				DILLON READ	**$1,750**	.05%
				FIRST BOSTON	**$12,900**	.40%
				JAMES CAPEL	**$1,250**	.04%
				WASSERSTEIN PERELLA (Texas Eastern)	**$7,500**	.23%
15	**RJR HOLDINGS CAPITAL sells debentures**	**$3,000,470**	**Offering of $1 billion 15% payment-in-kind subordinated debentures due 2001, $2 billion discount subordinated debentures due 2001 (with warrants), to finance leveraged buyout, May 12**	DREXEL BURNHAM LAMBERT	**$114,600**	3.82%
16	**BLACK & DECKER (power tools, household appliances) acquires EMHART (industrial, consumer products)**	**$2,670,000** 275%	**Acquisition for cash, July 18**	SALOMON BROTHERS (Black & Decker)	**$5,000**	.19%
				SHEARSON LEHMAN HUTTON	**$5,000**	.19%
				WASSERSTEIN PERELLA (Emhart)	**$9,000**	.34%
17	**BSN (French food and beverage company) acquires RJR NABISCO's five European food businesses from RJR HOLDINGS (Kohlberg Kravis Roberts)**	**$2,500,000** N.A.	**Acquisition for cash, June 6**	LAZARD FRÈRES (BSN)	**N.A.**	—
				MORGAN STANLEY	**N.A.**	—
				SAMUEL MONTAGUE (RJR Holdings)	**N.A.**	—

N.A. Not available.
* Lead manager.
[2] Group formed by Hospital Corp. of America management, Morgan Capital, and other investors.
[3] Group formed by Alfred Checchi and other investors.

Mergers and acquisitions

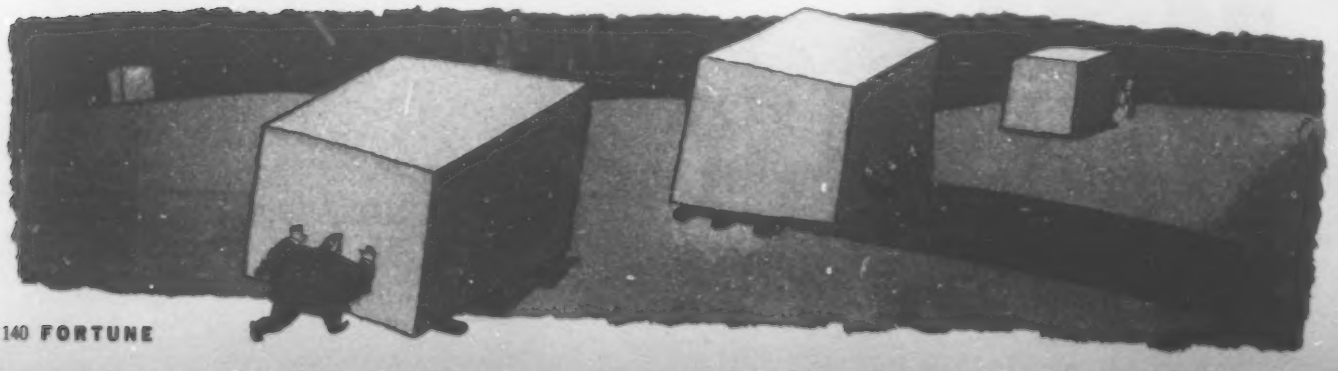
Securities offerings

RANK		VALUE (000) % of book value	TRANSACTION	FINANCIAL INTERMEDIARIES (Client)	FEE (000)	FEE as % of deal
18	**STONE CONTAINER** (paperboard, packaging) acquires **CONSOLIDATED-BATHURST** (newsprint, pulp, packaging)	$2,173,500 249%	Acquisition for cash, April 13	BURNS FRY	$525	.02%
				FIRST BOSTON	$8,500	.39%
				LEVESQUE BEAUBIEN	$525	.02%
				SCOTIA MCLEOD (Stone Container)	$525	.02%
				NOT PUBLICLY DISCLOSED (Consolidated-Bathurst)	–	–
19	**TEXACO** pays special dividend	$2,120,000 26%	Dividend paid in two stages: $4 in cash and $3 in cash, $1 in preferred stock, to shareholders as part of a $7 billion restructuring, September 18	MORGAN STANLEY	N.A.	–
20	**FORD MOTOR** acquires 77% of **JAGUAR** (automobiles), raising its ownership to 90%	$2,000,933 541%	Cash tender offer December 29 as part of a $2.5 billion acquisition due to close in 1990	GOLDMAN SACHS	$6,445	.26%
				S.G. WARBURG (Ford Motor)	$6,445	.26%
				J.O. HAMBRO MAGAN	N.A.	–
				MORGAN GRENFELL (Jaguar)	N.A.	–
21	**PACIFICORP** (electric utility) acquires **UTAH POWER & LIGHT** (electric utility)	$1,911,574 172%	Acquisition for stock, January 9	FIRST BOSTON (PacifiCorp)	$2,000	.10%
				KIDDER PEABODY (Utah Power & Light)	$10,500	.55%
22	**PEPSICO** acquires soft-drink bottling business from **GENERAL CINEMA** (theaters)	$1,750,000 N.A.	Acquisition for cash, March 23	NONE EMPLOYED (PepsiCo)	–	–
				FIRST BOSTON (General Cinema)	$5,500	.31%
23	**IMA HOLDINGS**[4] acquires 86% of **AMERICAN MEDICAL INTERNATIONAL** (hospitals, services)	$1,669,500 263%	Cash tender offer October 26 as part of a $1.9 billion leveraged buyout due to close in 1990	FIRST BOSTON	$20,000	1.05%
				GKH PARTNERS (IMA Holdings)	$10,000	.53%
				GOLDMAN SACHS (American Medical International)	$15,900	.84%
24	**UNILEVER** (consumer products, packaged goods) acquires **FABERGÉ**'s personal care business from **RIKLIS FAMILY GROUP**	$1,550,000 N.A.	Acquisition for cash, August 4	NONE EMPLOYED (Unilever)	–	–
				PAINE WEBBER (Riklis Family Group)	N.A.	–
25	**ABB ASEA BROWN BOVERI** (electrical engineering services) acquires 96.7% of **COMBUSTION ENGINEERING** (power plants, equipment)	$1,515,095 247%	Cash tender offer December 14 as part of a $1.6 billion acquisition due to close in 1990	FIRST BOSTON (ABB ASEA Brown Boveri)	$2,500	.16%
				MORGAN STANLEY (Combustion Engineering)	$6,700	.42%
26	**NEWCO HOLDINGS**[5] acquires **GAF** (specialty chemicals, building materials)	$1,474,964 248%	Leveraged buyout for cash and debentures, March 29	DREXEL BURNHAM LAMBERT	$2,500	.17%
				MERRILL LYNCH (Newco Holdings)	$2,500	.17%
				FIRST BOSTON	$250	.02%
				SALOMON BROTHERS (GAF)	$2,250	.15%

N.A. Not available.
[4] Group formed by Harry Gray, Mel Klein & Partners, and First Boston.
[5] Group led by GAF's chairman, Samuel Heyman.

Mergers and acquisitions

Securities offerings



RANK		VALUE (000) % of book value	TRANSACTION	FINANCIAL INTERMEDIARIES (Client)	FEE (000)	FEE as % of deal
27	**FARLEY** (industrial equipment) acquires 85.3% of **WEST POINT-PEPPERELL** (textiles, apparel), raising its ownership to 95%	$1,460,459 238%	Cash tender offer April 5 as part of a $1.8 billion acquisition due to close in 1990	DREXEL BURNHAM LAMBERT (Farley)	$10,000	.56%
				GOLDMAN SACHS MERRILL LYNCH (West Point–Pepperell)	$13,728 $14,328	.76% .80%
28	**PROCTER & GAMBLE** (household products) acquires **NOXELL** (cosmetics, toiletries, household products)	$1,426,572 521%	Acquisition for stock, November 30	GOLDMAN SACHS (Procter & Gamble)	N.A.	–
				AI EX. BROWN & SONS (Noxell)	$4,000	.28%
29	**FORD MOTOR** acquires credit operations from **MERITOR FINANCIAL GROUP**	$1,400,000 N.A.	Acquisition for cash, March 21	NONE EMPLOYED (Ford Motor)	–	–
				FIRST BOSTON (Meritor Financial Group)	$3,008	.21%
30	**BRITISH TELECOMMUNICATIONS** acquires 20% of **McCAW CELLULAR COMMUNICATIONS** (cellular telephones)	$1,370,000 N.A.	Acquisition for cash, June 20	DONALDSON LUFKIN & JENRETTE S.G. WARBURG (British Telecommunications)	N.A. N.A.	– –
				MORGAN GUARANTY TRUST (McCaw Cellular Communications)	N.A.	–
31	**HOUSTON INDUSTRIES** (electric utility holding company) acquires U.S. cable systems from **ROGERS COMMUNICATIONS** (CATV)	$1,365,000 N.A.	Acquisition for cash, March 14	NONE EMPLOYED (Houston Industries)	–	–
				MORGAN STANLEY (Rogers Communications)	N.A.	–
32	**PEPSICO** acquires British snack food companies (**WALKERS CRISPS & SMITHS CRISPS**) from **BSN** (French food and beverage company)	$1,350,000 N.A.	Acquisition for cash, July 3	BLACKSTONE GROUP (PepsiCo)	N.A.	–
				LAZARD FRÈRES (BSN)	N.A.	–
33	**TW HOLDINGS**[a] acquires 81% of **TW SERVICES** (vending machines, food)	$1,349,694 314%	Leveraged buyout for cash and stock, December 6	GOLLUST TIERNEY & OLIVER DONALDSON LUFKIN & JENRETTE (TW Holdings)	$13,600 $13,600	1.01% 1.01%
				FIRST BOSTON MERRILL LYNCH (TW Services)	$5,223 $5,250	.39% .39%
34	**TYSON FOODS** (poultry) acquires **HOLLY FARMS** (poultry, flour milling)	$1,287,874 302%	Acquisition for cash, August 10	STEPHENS (Tyson Foods)	$3,000	.23%
				MORGAN STANLEY (Holly Farms)	$5,125	.40%
35	**DAI-ICHI KANGYO BANK** acquires 60% interest in the **CIT GROUP** (finance company) from **MANUFACTURERS HANOVER** (banking)	$1,280,000 N.A.	Acquisition for cash, December 29	NOT PUBLICLY DISCLOSED (Dai-Ichi Kangyo Bank)	–	–
				GOLDMAN SACHS (Manufacturers Hanover)	N.A.	–
36	**KROGER** (supermarkets, drug stores) sells debentures	$1,250,000	Offering of debentures as part of a restructuring program, January 19	GOLDMAN SACHS	$43,750	3.50%
37	**QUANTUM CHEMICAL** (plastics, propane marketing) pays special dividend	$1,225,000	Dividend of $50 a share to stockholders as part of a $1.7 billion leveraged recapitalization, January 10	DILLON READ FIRST BOSTON	$5,374 $5,374	.44% .44%

N.A. Not available.

[a] Group formed by the investment partnership of Gollust Tierney & Oliver and Donaldson Lufkin & Jenrette.

Mergers and acquisitions

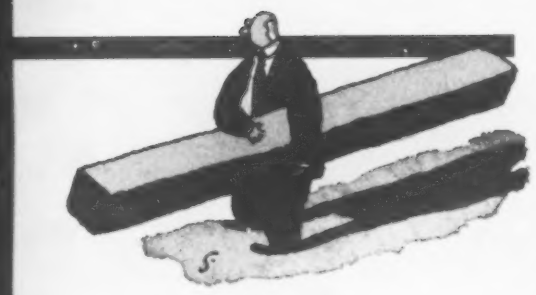
Securities offerings

RANK	VALUE (000) % of book value	TRANSACTION	FINANCIAL INTERMEDIARIES (Client)	FEE (000)	FEE as % of deal
38 **GENERAL ELECTRIC CAPITAL (finance company) sells notes**	**$1,200,000**	**Offering of $1.2 billion 10.15% notes due 1990, March 16**	KIDDER PEABODY*	**$1,500**	.13%
			FIRST BOSTON		
			GOLDMAN SACHS		
			MERRILL LYNCH		
			MORGAN STANLEY		
			SALOMON BROTHERS		
			SHEARSON LEHMAN HUTTON		
39 **ANHEUSER-BUSCH (brewing, baked goods) acquires six theme parks and land holdings from HARCOURT BRACE JOVANOVICH (publishing)**	**$1,100,000** N.A.	**Acquisition for cash, November 30**	DILLON READ (Anheuser-Busch)	**N.A.**	–
			FIRST BOSTON (Harcourt Brace Jovanovich)	**N.A.**	–
40 **LONG ISLAND LIGHTING (utility) sells debentures**	**$1,094,790**	**Offering of debentures for refunding senior securities and reimbursing the company for expenditures, June 29**	SHEARSON LEHMAN HUTTON*	**$9,500**	.87%
			BEAR STEARNS		
			DILLON READ		
			FIRST BOSTON		
			PAINE WEBBER		
41 **SOCIÉTÉ NATIONALE ELF AQUITAINE (oil, gas exploration and production) acquires PENNWALT (chemicals)**	**$1,061,544** 402%	**Acquisition for cash, October 11**	MORGAN STANLEY (Société Nationale Elf Aquitaine)	**$4,500**	.42%
			GOLDMAN SACHS (Pennwalt)	**$7,875**	.74%
42 **UNITED ARTISTS COMMUNICATIONS (movie theaters, cable TV) and UNITED CABLE TELEVISION (cable systems) merge to form UNITED ARTISTS ENTERTAINMENT**	**$1,047,624** 1,383%	**Merger by exchange of stock and cash for shares not previously owned by Tele-Communications, which controls both companies, May 25**	BEAR STEARNS	**$625**	.04%
			DANIEL & ASSOCIATES (United Artists Communications)	**$625**	.04%
			DREXEL BURNHAM LAMBERT	**$3,375**	.19%
			PRUDENTIAL-BACHE (United Cable Television)	**$725**	.04%
43 **GGVA HOLDING[7] acquires OHIO MATTRESS (bedding)**	**$980,000** 374%	**Leveraged buyout for cash and warrants, August 9**	GIBBONS GREEN VAN AMERONGEN	**$13,800**	1.41%
			FIRST BOSTON (GGVA Holding)	**$4,000**	.41%
			LAZARD FRÈRES (Ohio Mattress)	**$9,410**	.96%
44 **MAYTAG acquires CHICAGO PACIFIC (home appliances)**	**$962,439** 211%	**Acquisition for cash and stock, January 26**	SALOMON BROTHERS (Maytag)	**$5,200**	.54%
			GOLDMAN SACHS (Chicago Pacific)	**$7,700**	.80%
45 **LYONDELL PETROCHEMICAL sells common stock**	**$960,000** 706%	**Initial public offering for 32 million shares, January 18**	GOLDMAN SACHS*	**$54,400**	5.67%
			SALOMON BROTHERS		
46 **CHICAGO & NORTH WESTERN HOLDINGS[8] acquires CNW (railroads)**	**$952,000** 186%	**Leveraged buyout for cash and stock, October 27**	BLACKSTONE GROUP	**$17,168**	1.80%
			DONALDSON LUFKIN & JENRETTE	**$8,832**	.93%
			FIRST BOSTON (Chicago & North Western Holdings)	**$1,722**	.18%
			GOLDMAN SACHS	**$5,800**	.61%
			SALOMON BROTHERS (CNW)	**$5,800**	.61%
47 **AMERICAN HOME PRODUCTS (pharmaceuticals, food) acquires A.H. ROBINS (pharmaceuticals)**	**$900,000** N.A.	**Acquisition for stock, as part of a $3.2 billion deal. Remainder went to pay victims of Robins's Dalkon Shield, December 15.**	MORGAN STANLEY (American Home Products)	**N.A.**	–
			DREXEL BURNHAM LAMBERT	**N.A.**	–
			FIRST BOSTON (A.H. Robins)	**N.A.**	–
47 **MFS CHARTER INCOME TRUST (closed-end investment company) sells common stock**	**$900,000**	**Initial public offering of 75 million shares, July 20**	KIDDER PEABODY*	**$63,000**	7.00%
			SMITH BARNEY HARRIS UPHAM		
			WHEAT FIRST BUTCHER & SINGER		
			THOMSON MCKINNON SECURITIES		
49 **POLLY PECK INTERNATIONAL (electronics, agriculture) acquires RJR NABISCO's DEL MONTE tropical fruit business from RJR HOLDINGS (Kohlberg Kravis Roberts)**	**$875,000** N.A.	**Acquisition for cash, December 5**	FIRST BOSTON (Polly Peck)	**$5,000**	.57%
			GOLDMAN SACHS (RJR Holdings)	**N.A.**	–
50 **AMERADA HESS (oil exploration) acquires oil and gas assets from TRANSCO ENERGY (natural gas pipelines)**	**$866,000** N.A.	**Acquisition for cash, August 31**	NOT PUBLICLY DISCLOSED (Amerada Hess)	–	–
			LAZARD FRÈRES	**N.A.**	–
			MERRILL LYNCH (Transco Energy)	**N.A.**	–

N.A. Not available.
* Lead manager.
[7] Group led by Gibbons Green van Amerongen.
[8] Group formed by Blackstone Capital Partners, Donaldson Lufkin & Jenrette, Union Pacific, and CNW management.

Mergers and acquisitions

Securities offerings



EXPLANATORY NOTES

Deals eligible for the list include:

1. U.S. public offerings of securities (except short-term securities) by domestic and foreign corporations, issued under a single prospectus or offering circular.
2. Cash tender offers by domestic corporations or by foreign corporations tendering in the U.S., including those of companies buying in their own securities.
3. Mergers or acquisitions in which the buyer or seller is a U.S. company or part of one. To be eligible, offerings must be effective in 1989 and tender offers must have expired during the year. Mergers and acquisitions are eligible if legally closed during the year or, when not legally closed, if the prospective buyer has paid a portion of the purchase price in cash during the year.

The list excludes short-term financings, government securities, routine debt offerings by financial companies, repackagings of mortgage and other debt, and financings other than public offerings—such as bank borrowings and private placements.

VALUE OF DEAL

Debt assumed in acquisitions is not included in the price. Amounts for cash offerings are the total amounts raised; for tenders the total amount paid. All securities issued in acquisitions or mergers are valued at the market price on the date of closing. When two companies merge through an exchange of stock to form a new company, the company whose stockholders received the larger share of the new company is treated as the buyer, and only those shares issued to stockholders of the small company are valued.

PERCENT OF BOOK VALUE

Book value calculations indicate the price paid (or amount of equity capital raised) per share as a percentage of the shareholders' equity per share of the acquired company or issuer at the end of the last quarter preceding the transaction.

TRANSACTION

Dates under this heading are effective dates for offerings, expiration dates for tenders, and closing dates for acquisitions and mergers.

FINANCIAL INTERMEDIARIES

For underwritten public offerings, the co-managers are listed and the lead manager is indicated by an asterisk. In the case of acquisitions and mergers, the intermediaries are typically investment banking firms that assisted in the transaction.

FEE

The figures represent the amounts charged by the financial intermediaries assisting the deals. In underwritings, part of the fee is paid to other members of the underwriting syndicate or to dealers other than the co-managers. In mergers and acquisitions, fees paid for financing services are excluded, when possible. F

If you like our charcoal mellowed whiskey we hope you'll write us and say so. We promise to write back.

AT JACK DANIEL'S DISTILLERY, men take pride in a whiskey-making tradition that calls for moving slowly.

Every drop of Jack Daniel's is seeped through room-high mellowing vats prior to aging. It's an old Tennessee process that simply can't be hurried. Then, we wait while our whiskey gains more smoothness in charred oak barrels. Admittedly, there are times when it looks like we're hardly working. But after your first sip, we think you'll appreciate our laid back ways.

SMOOTH SIPPIN'
TENNESSEE WHISKEY

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■ U.S. WINNERS IN JAPAN • IACOCCA SPEAKS • COMPUTER WARS IN THE 1990s

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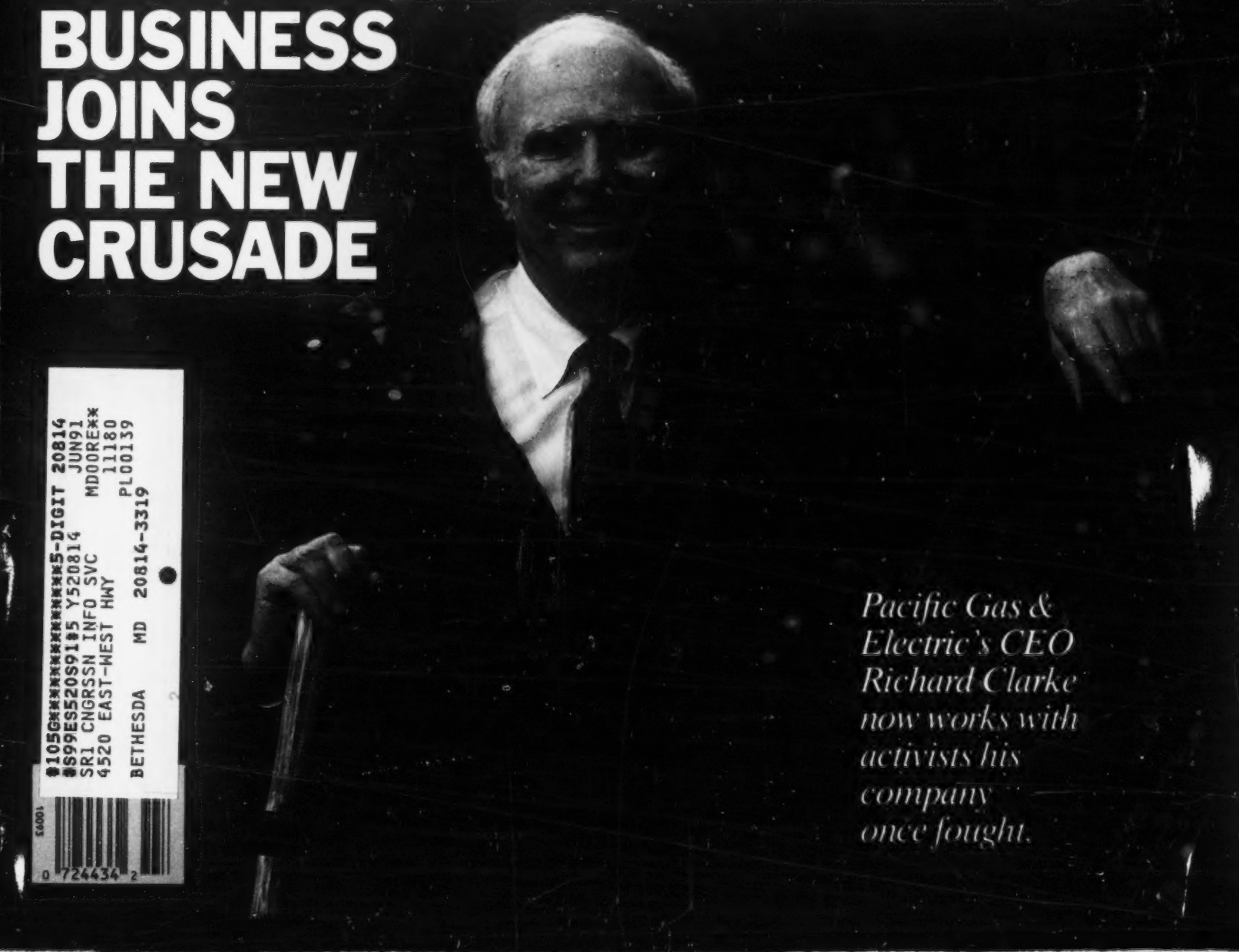
FORTUNE

THE ENVIRONMENT

BUSINESS JOINS THE NEW CRUSADE



Pacific Gas & Electric's CEO Richard Clarke now works with activists his company once fought.

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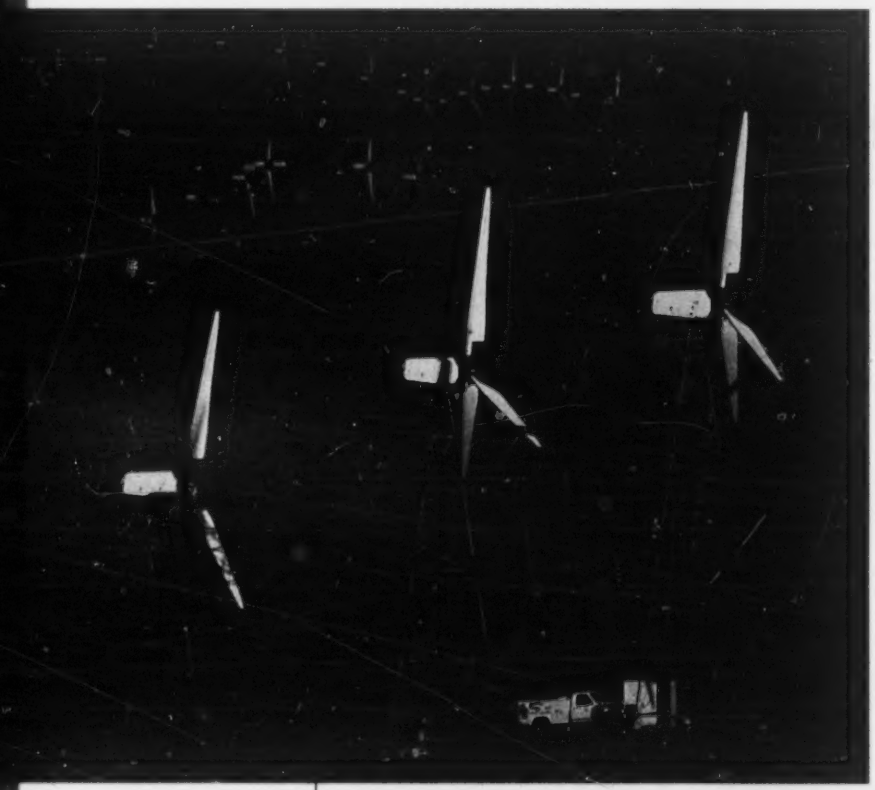
FORTUNE



ABOVE: Wind turbines operated by U.S. Windpower in Altamont Pass, California, to produce electricity, photographed by George Steinmetz.

COVER: Chairman Richard Clarke of Pacific Gas & Electric, photographed by Blake Little—Visages.

"In the Nineties environmentalism will be the cutting edge of social reform and absolutely the most important issue for business." PAGE 44

MANAGING/Cover Story

ENVIRONMENTALISM: THE NEW CRUSADE 44

It is expected to be not only the biggest business issue of the 1990s but a mainstream movement of massive worldwide force. Environmentalists are moving from confrontation to the best kind of collaboration. And instead of mere compliance with government regulations, smart companies are joining in the pilgrimage toward "eco-responsibility." Farsightedness today will pay off tomorrow. *by David Kirkpatrick*

LEADING THE CRUSADE INTO CONSUMER MARKETING 50

TECHNOLOGY

WHO'S AHEAD IN THE COMPUTER WARS 58

Look whose earnings are down: IBM, Apple, Digital, and more. Competition and technology have lowered the cost of computing power and with it the price of the machines. Not all big companies will survive the rough 1990s. But some stand to prosper. *by Brenton R. Schlender*

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"This industry may have hyped itself into a recession."

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"There's a feeling that anyone associated not just with cars but with American industry as a whole is some kind of dope."

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"What you have here is a consumer capable, willing, and able to spend."

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"It's mind-boggling that so many people have put so much money into something they don't understand."

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"Those little guys have built an empire over there. They have so much money it scares you."

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"It has real value in saving lives and property. I am driven to do it."

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Those down-home Stephens boys made it big in Little Rock. More ambitious now than ever, they want to bust out and—by focusing on a few fee-rich industries—be the investment bankers for middle America too. *by Christopher Knowlton*

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FORTUNE's quarterly investment guide advises that it's no time to bail out of the stock market. On the other hand, shares are unlikely to move much higher soon. *by John J. Curran*

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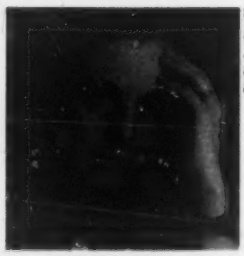
EDITOR'S DESK

PETER GRECCHI

Writer David Kirkpatrick in New York's Catskill Mountains: "Environmentalism won't fade away."

YOU DON'T HAVE to work for Exxon to know that the environmental movement can have a powerful impact on your business. Nowadays three out of four Americans tell pollsters that a company's environmental reputation affects their buying decisions. And so we sent writer David Kirkpatrick and reporter Alicia Moore to find out how business is responding.



GERRY CHOO

Reporter Alicia Moore

Kirkpatrick was telling business leaders about environmental issues even before the first Earth Day in 1970. He began to raise his ecological consciousness as a Boy Scout, when he organized a project to remove litter from highways near his Connecticut home. He and his fellow Scouts calculated how much trash they scooped up per mile of road, then passed out fliers at the local commuter train station to call attention to the problem.

Addressing a considerably wider audience of business leaders now, Kirkpatrick sees much to applaud. Says he: "A lot of corporations are taking great pains to understand and accommodate environmental concerns." In place of antagonism, he found constructive—and often profitable—cooperation between business and environmentalists. One sign that environmental awareness has taken deep root: The corporations that are leaders—like Pacific Gas & Electric, McDonald's, 3M, and Du Pont, among many others—are the first to acknowledge how much more they need to do to help the great cleanup.

As for those companies that have so far paid scant attention to the environmental movement, Kirkpatrick warns: "Environmentalism won't fade away. It's going to get bigger. It's going to get more important to your employees and your customers. And more important to you, both professionally and, probably, personally."

As you may know, Time Inc. Magazines will launch a new magazine in February titled *Entertainment Weekly*. Facing page 72 is a supplement that will give you an idea of what it will be like.

Marshall Loeb

MANAGING EDITOR

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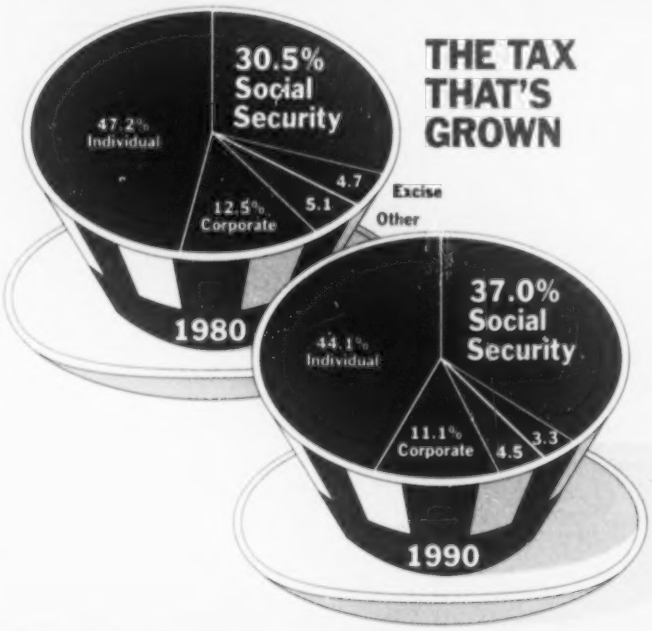


BUSH FACES A TAX STEAMROLLER

■ Despite White House efforts to quash New York Democratic Senator Daniel Patrick Moynihan's plan to slash payroll taxes by $62 billion over two years, support is spreading like wildfire on both sides of the political divide. Among the early enthusiasts: the conservative Heritage Foundation, the neoliberal Progressive Policy Institute, the U.S. Chamber of Commerce, and the National Federation of Independent Business. Says business lobbyist Dirk Van Dongen: "I see all the makings of a steamroller."

USA GIBSON/BLACK STAR

Moynihan: truth serum

To Democrats, Moynihan's proposal smacks of sweet revenge. It recaptures for them the tax cut issue. And it puts heat on President Bush to raise other taxes elsewhere. As it is, Social Security grew faster than any other federal tax source in the past ten years (see chart). Some 80% goes to paying beneficiaries and the rest is invested in Treasury securities. Those borrowed funds then go to pay other federal bills, such as welfare and the Pentagon—not where most workers think their payroll taxes are going. Says lobbyist Daniel Flanagan, of the proposal by his longtime friend the Senator: "It's political truth serum at its best."

Many liberals also hope Moynihan's initiative will lead to a more progressive income tax system. Some moderates, like Democratic Senator Ernest Hollings of South Carolina, see an opening to push a value-added tax. Conservatives want deeper spending cuts and some privatization of Social Security.

Critics fear the most likely outcome would be bigger deficits—a dismal prospect—and higher income taxes. Warns Paul Huard, vice president of the National Association of Manufacturers: "If the Democrats want to give tax relief to the bulk of the wage-earning population and the President wants a capital gains cut, he'll probably have to eat rate increases elsewhere." This time the Democrats could come out on top. **– Ann Reilly Dowd**

SHADES OF ABE IN JAPAN

■ One of the trendiest magazines in Japan right now: *Woody Life*, a quarterly devoted to buying, decorating, adding to, and doing over log cabins, themselves one of the country's hottest fads. There are Abe Lincoln Levittowns in new resort developments, year-round Santa Claus villages of log cabin bed-and-breakfast establishments, even a log-built Buddhist temple. Log cabin penthouses could very well be next. A Tokyo entrepreneur is selling kits for log homes not much bigger than a Toyota to sit atop high-rises.

Sales of log cabins have almost doubled in each of the past five years to some $450 million annually. More than half come from the U.S., Canada, and Scandinavia. The buyers are Tokyo apartment dwellers, including yuppies, who, like their U.S. counterparts, tour city streets in four-wheel-drive trucks. Says importer Kotaro Noda: "Land prices are so high in the city that people have given up ever having a house. So they buy a bit of land in the countryside and a log cabin to put on it." Noda gets his cabins from **Asperline** of Lock Haven, Pennsylvania.

A basic four-room cabin sells for $100,000 to $200,000. A lot measuring one-tenth of an acre in one of the resort communities a five-hour drive from Tokyo costs an additional $50,000. Modern plumbing and electricity are installed free.

Assembling the cabins has sparked another import: carpenters, including 20 Americans. Japan can't supply the demand. **– Susan Moffat**

The Haga family at their $103,000 log cabin in the mountains

TAKEHIKO YUZAWA

BY JOHN J. CURRAN

THE BEST INVESTMENT STRATEGY FOR A SLOW-GROWTH ECONOMY

Don't sell your shares, but shop carefully, says FORTUNE's quarterly investment guide.

■ As the economy's record expansion lengthens, so does the list of reasons to bail out of the stock market. The specter of recession looms larger, the junk-bond market is crumbling, and interest rates threaten to rise. Might it be wise to sell your shares now and stash that cash in a supersafe money market account?

No. The only time to reach for the rip-cord is when stock prices climb to dangerously overvalued heights, as they did in 1987. We're nowhere near that level today. The price/earnings multiple of Standard & Poor's 500-stock index stands at 14—above the market's historical norm of 13, but well below the P/E of 22 that prevailed in August 1987.

Nor are other critical gauges flashing red. Consider dividends. At 3.3% the yield on stocks is low, but not dangerously so. Typically the market doesn't peak until the dividend yield drops below 3%. Sure, a severe recession could send stocks into a nose dive, even if they weren't overvalued. But most forecasters, including FORTUNE, see growth ahead, albeit slow.

That doesn't mean shares are likely to move much higher soon. Since the summer the stock market has been unable to sustain major gains and quick to fall on the slightest bad news (see chart). That kind of volatility could continue well into 1990.

The reason is simple: The engines that powered the big climb in stock prices are now sputtering. In 1988 earnings per share for companies in the S&P 500 rose more than 35%. In 1989, however, those gains all but disappeared. FORTUNE does expect corporate profits, which declined slightly in 1989, to average higher this year (see Forecast). But since that improvement will probably be accompanied by higher inflation—and thus higher interest rates—stock prices may get no lift.

In the 1980s the prospect of restructuring lifted many securities far above the price they could fetch on the promise of higher earnings alone. Analysts at Goldman Sachs attribute 20% of the market's 112% rise over the past six years to a shrinkage in the supply of shares caused by takeovers, stock buybacks, and LBOs.

But U.S. corporations should be less active buyers in 1990. For one thing, would-be acquirers can no longer raise investment capital at the drop of a junk bond. More importantly, they no longer view stocks as temptingly cheap. Most bargain hunters start by comparing a company's share price with what they calculate its assets would bring if sold separately in the marketplace, a measure known as replacement book val-

WHAT THE HECK DO I DO NOW?

FOUR BY FIVE

STOCKS

■ **Shed a few pricey, recession-proof shares and seek out bargains in basic industries, such as aluminum.**

IMAGE BANK

BONDS

■ **Five- to seven-year Treasuries and pre-refunded munis are a buy. Even some junk—no kidding—looks good.**

FOUR BY FIVE

REAL ESTATE

■ **The bear still prowls this market. Focus on real estate investment trusts that sell at a discount to asset value.**

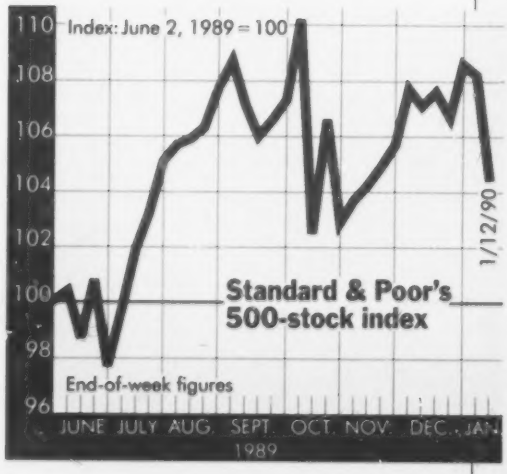
LOUIS PSHOYOS

COMMODITIES

■ **Gold won't rise much unless inflation gets scary. Slumping auto sales could take the shine off platinum.**

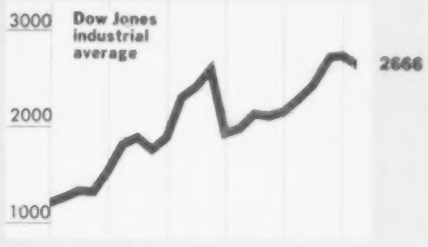
THE ADVANCE STALLS OUT

Weighed down by disappointing earnings, stocks have been unable to stay consistently aloft. Analysts expect the turbulence to continue.

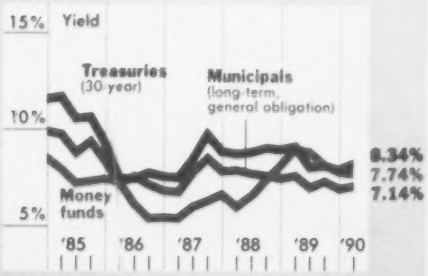


STATE OF THE MARKETS

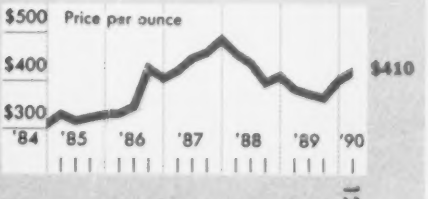
Stocks



Bonds



Gold



12/21

This is Fortune's fortnightly look at the major markets of the past five years

CHARTS SHOW END-OF-QUARTER FIGURES.

BASED ON EARNINGS FOR THE LATEST FOUR QUARTERS.

SOURCES: STANDARD & POOR'S, BOND BUYER, DONOGHUE'S MONEY FUND REPORT, COMMODITY EXCHANGE

ue. In 1982, at the dawn of the bull market, the average stock sold for less than half replacement book value—an irresistible temptation for a raider. Now, however, many prices equal replacement book value.

Since the fundamentals are merely mediocre rather than bad, a contrarian could view an oversupply of bears as a buying opportunity. The rule of thumb at Investors Intelligence, which polls investment advisers, is that when the percentage of bulls sinks below 40%, a rally is in the offing. But in its latest survey more than 46% of the pros still called themselves bullish.

So which types of stocks will fare best in this sort of choppy weather? The least likely winners will be 1989's highfliers—big-capitalization stocks in recession-resistant industries such as cosmetics, drugs, and tobacco. That group is already richly priced.

Look instead among the crowd that underperformed last year—cyclically sensitive industries such as paper and aluminum. Since these are the companies that would be damaged the most if a full-blown recession hit, most investors still prefer to pass them by. But the bold can find bargains. Says Steven Einhorn, an investment strategist at Goldman Sachs: "The recovery in these stocks may still be months off, but on a value basis, they are very attractive." Among his most promising picks: **Alcoa Aluminum**, which sells at a very low multiple.

You should probably avoid energy stocks, whose prices were pumped up more than 30% by rising crude prices last year. According to a recent study by Sanford Bernstein, the shares of oil companies already reflect investor expectations that prices will soon hit $25 per barrel. But in mid-January the price was still stuck around $22.

America's growing appetite for energy imports could produce a few investment opportunities. Thomas Sweeney, portfolio manager of Fidelity's Capital Appreciation fund, believes increased demand for oil imports will fuel a sharp run-up in the value of tankers. Says he: "You ain't seen nothin' until you've seen a bull market in oil tankers." Sweeney points out that while demand for oil tankers has been growing at 10% a year, supply has been increasing at less than 3%. He likes **OMI Corp.**, which owns a fleet. The stock sells at $10 a share, but Sweeney thinks the ships alone are worth $16. He also likes **Overseas Shipholding Group**. The stock sells at $23, but the fleet's value is about $35 a share.

Here's a final fear play: financial companies. With investors anxious about bank write-offs of Third World debt, the S&L crisis, and rising interest rates, these are among the cheapest stocks around. The courageous can find attractive buys. Julian Robertson, head of Tiger Management, a New York hedge fund, has plowed money into **First Financial**, a closed-end mutual fund traded on the New York Stock Exchange. The fund's portfolio includes only the very best savings and loans. Says Robertson: "Their thrifts are small, well capitalized, and secure." He believes that the stocks of high-quality thrifts have been undeservedly punished and will recover.

Such bets may seem offbeat. But in the uncertain environment of 1990, it may take out-of-the-way stocks to turn a profit. Robertson has certainly done well by being different. Last year his fund was up 62%.

What follows is a guide to the other principal markets.

■ **BONDS.** In 1989 the average long-term bond provided a satisfying total return of 14%. Don't expect to repeat that feast in 1990. Yields on most bonds are down sharply. Prices, which fall when interest rates rise, could suffer later in the year if rates edge up, as FORTUNE expects.

To prosper, investors will need to be more savvy about which bonds they buy. Among Treasuries, the best bet these days is intermediate maturities of five to seven years, which yield about 8%. These bonds yield almost as much as longer-maturity Treasuries, but they are far less vulnerable to an upward spike in interest rates.

If you pay taxes—and except for pension funds, most folks do—the best pickings are in the municipal patch. Says Gary Coburn, head of the fixed-income department at the Putnam Cos.: "Without doubt, the municipal market is the most attractive of any bond sector." A high-grade general-obligation municipal bond now yields about 7.1%. While Treasuries of a similar maturity yield 8.4%, their after-tax payoff for someone in the 28% bracket is only 6.1%, a full percentage point less than munis.

continued

REPORTER ASSOCIATES *Joshua Mendes, Karen Nickel, and Ellen Schultz*

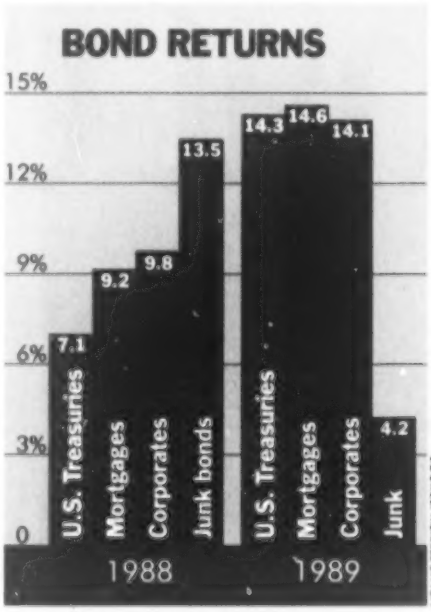
Aaron Gurwitz, a bond portfolio strategist at Goldman Sachs, is a big fan of pre-refunded munis. These are bonds that the issuing city or town wishes to retire but can't because the bond's covenants generally forbid it to do so before a specified date. As an alternative, the issuer sets aside a sufficient amount of Treasury bonds to meet all principal and interest payments on the outstanding muni. For investors that means an opportunity to buy tax-free bonds with the gilt-edged security of Treasuries. Long-term pre-refunded munis are currently yielding 6.4%.

Prices in the junk market have been battered lately by a series of highly publicized corporate bond defaults. The total in 1989 amounted to $11.7 billion, according to the Bond Investors Association. That's a 136% increase over 1988. Such scary statistics have sent junk yields soaring. First Boston's index of junk bonds shows that the spread between their yields and Treasuries has widened to nearly eight percentage points—the biggest ever recorded. Should an aggressive investor jump at that gap? Yes, but carefully, says Fred Quirsfeld, portfolio manager of the IDS Bond Fund: "I don't know when you'll realize it, but for someone with a longer-term time horizon, there is clearly value in the junk market."

While junk-bond mutual funds provide diversity, the risk persists that they could be hit by massive redemptions, which would hurt returns. Experts advise those daring enough to play to look for higher-quality individual bonds. Quirsfeld likes **American Standard** 12 7/8% bonds due 2000, which yield 12.5%, and **Masco** 10% bonds due 1995, which yield 13.4%. Robert Rodriguez, portfolio manager of the FPA New Income fund, is snapping up **Storer Communications** zero-coupon bonds due in December 1993. The bond yields 11.75%.

■ **REAL ESTATE.** Much of the U.S. property market remains firmly in the grip of the bear. Worst squeezed is the office sector, where overcapacity and weak demand—the national vacancy rate is nearly 16%—have actually produced falling prices.

Even in the best of times real estate investors should be wary of excessive fees that can crimp returns. That rules out most limited partnerships, whose start-up and management fees can snare up to 20% of your initial investment. For most people the best way to buy into bricks and mortar is through a broad list of real estate investment trusts that trade on the nation's stock exchanges. REITs offer a diversified portfolio of actively managed real estate but come with no start-up costs and only modest management fees. Like limited partnerships, these vehicles offer dividends that escape double taxation since they pay no corporate taxes. But REITs also offer liquidity, which most limited partnerships do not. At recent prices REITs were averaging an 8.5% yield.



A FLIGHT TO QUALITY

Junk bonds ruled in 1988. But defaults in 1989 hammered returns and triggered a giant sell-off.

Though investors tend to select REITs solely on the basis of yield and P/E, analysts maintain that their real value is their underlying assets. Because the market is so weak, many REIT shares have recently begun selling at below asset value, creating a rare buying opportunity. Says Michael Kirby, a principal with Green Street Advisors, a real estate research firm in Newport Beach, California: "The discounts to asset value today are as big as we've seen in the last couple of years."

One of Kirby's favorites is **United Dominion Realty**, which operates apartments and small shopping centers across the Southeast, from Virginia to Georgia. The shares yield 7.1% and trade at a 10% discount to the underlying value of the real estate. He is also high on **New Plan Realty**. Though its portfolio is chock-full of properties in the depressed Northeast, Kirby believes New Plan's strategy of buying run-down shopping centers and fixing them up will generate strong earnings, even in a weak market. It currently yields 5.9%.

Texas would seem the last place to buy real estate. Of the 30,000 properties that must be disposed of by Resolution Trust Co., more than half are in the Lone Star State. But **Weingarten Realty Investors**, a REIT that invests heavily in Texas property, has been earning splendid returns even through the toughest times. Analysts believe that as the Texas economy slowly recovers, Weingarten's shares will keep rising. In the meantime, the shares yield a generous 6.1%.

■ **COMMODITIES.** Fueled by an uptick in inflation and continuing tumult in the Communist bloc, bullion prices have jumped 16% since October. Reflecting expectations of even higher prices, the shares of gold-mining companies have gone up even higher. After a long silence the gold bugs are once again chirping loudly.

Don't listen. While analysts are mildly optimistic on the outlook for gold prices, most remain convinced that without a frightening inflationary spiral—a prediction only the buggiest believe—gold's rise will be short-lived. Reach for the Raid.

The bull run in platinum prices, which began in 1985, may now be over. Platinum is a key ingredient in the catalytic converters used to purify auto emissions. With auto sales slumping, platinum sales and prices should drop as well. Jeffrey Christian, a managing director at CPM Group, a commodities research firm, thinks platinum's price could fall from $500 to $460 by this spring. Even if you share that conviction, however, analysts advise against the treacherous strategy of selling short. Says Christian: "Shorting platinum is like playing field hockey with a dinosaur—the players are big, and you're likely to get bruised." F

ENVIRONMENTALISM:

It may be the biggest business issue of the 1990s. Here's how some smart companies are tackling it. ■ *by David Kirkpatrick*

TREND SPOTTERS and forward thinkers agree that the Nineties will be the Earth Decade and that environmentalism will be a movement of massive worldwide force. How massive? Listen to Gary Miller, a public policy expert at Washington University in St. Louis: "In the Nineties environmentalism will be the cutting edge of social reform and absolutely the most important issue for business." Futurist Edith Weiner of the Manhattan management consulting firm Weiner Edrich Brown concurs: "Environmentalism will be the next major political idea, just as conservatism and liberalism have been in the past."

The smartest companies are not just facing this thunderous music, they're singing along. Consider:

■ Du Pont is pulling out of a $750-million-a-year business because it may—just may—harm the earth's atmosphere.

■ McDonald's, which produces hundreds of millions of pounds of paper and plastic waste annually, has become a crusading proponent of recycling, and aims to become one of America's leading educators about environmental issues.

■ 3M is investing in myriad pollution controls for its manufacturing facilities beyond what the law requires.

■ Procter & Gamble and other smart marketers are moving to cast their products in an environmentally friendly light (see box).

■ Pacific Gas & Electric teams up with environmental groups—some of them outfits it used to fight—to do joint projects, such as a $10 million study of energy efficiency.

"The 1990s will be the decade of the environment." That's not the chief druid of Greenpeace talking, but rather the new president of the Petroleum Marketers Association of America in a November speech. Mere corporate ecobabble intended to placate the latest group of special-interest loonies? Any company that thinks that way will probably regret it. Exxon provides the obvious if inadvertent example of the bitter costs of seeming unconcerned about the environment. Not long after the March accident in Valdez, Alaska, 41% of Americans were angry enough to say they'd seriously consider boycotting the company. Bill McInturff senior researcher at the Wirthlin Group, a polling firm with close Republican ties,

Wal-Mart has asked all its suppliers for more recycled or recyclable products, which it trumpets loudly.

Nudged by the Environmental Defense Fund, Pacific Gas &

THE NEW CRUSADE

Electric dropped plans for coal and nuclear plants, now buys some power from these California windmills, and courts environmentalists.

PHOTOGRAPH BY GEORGE STEINMETZ

blames Exxon not for the accident but for its response: "It was a disservice to American industry the way the pullout last fall was handled. Exxon seemed satisfied with what they had accomplished. It hardened the notion that business is just interested in making a buck and doesn't give a damn. It flabbergasts me that a company that size doesn't get the drift." Even spending over $1 billion on cleanup hasn't salvaged the oil giant's reputation.

Such salvage won't get any easier. The New York Times/CBS News poll regularly asks the public if "protecting the environment is so important that requirements and standards cannot be too high, and continuing environmental improvements must be made regardless of cost." In September 1981, 45% agreed and 42% disagreed with that plainly intemperate statement. Last June, 79% agreed and only 18% disagreed. For the first time, liberals and conservatives, Democrats and Republicans, profess concern for the environment in roughly equal numbers.

Environmentalism is likely to continue as an issue at the forefront for several reasons. One is demographic. Says futurist Weiner: "The combination of baby-boomers having children and a significant part of the population moving into senior years means an enormous percentage of the population is taking the attitude of stewardship." The Gallup Organization reports that 49% of people over 50 feel strong identification with environmentalism, compared with 39% of those between 30 and 49 and 31% of those under 30. This reverses the pattern that prevailed during the country's last upsurge in environmentalism 20 years ago.

The new crusade will be different from the old in other ways as well. Miller of Washington University explains, "In the Sixties, environmentalism was the tail end of a period of social activism that was primarily based on civil rights and the antiwar movement," while now it's a movement of its own. The players are different. Far fewer activists of the 1990s will be embittered, scruffy, antibusiness street fighters.

In an innovative program, last fall McDonald's began asking customers at 100 New England outlets (this one is in Vermont) to dispose separately of polystyrene packaging—it's recyclable.

MARIANNE BARCELLONA (3)

AS AN EXAMPLE of the new breed, consider Allen Hershkowitz, who freely drops the names of his CEO acquaintances. As a solid-waste-disposal expert at the litigious Natural Resources Defense Council, Hershkowitz has won many legal battles with business. Now high-ranking executives of major companies regularly make the pilgrimage to his office in the elegant, airy, and amply funded New York City headquarters of NRDC, coming to him lest he go after them. As he explains, "They come in here to see what they've got to cover their asses on." The cocky 34-year-old Ph.D., who serves as an adviser to banks and Shearson Lehman Hutton, among others, elaborates, "My primary motivation is environmental protection. And if it costs more, so be it. If Procter & Gamble can't live with that, somebody else will. But I'll tell you, Procter & Gamble is trying hard to live with it."

Still, for all his militancy, Hershkowitz is no fanatic or utopian. He understands that a perfect world can't be achieved and doesn't hesitate to talk of trade-offs: "Hey, civilization has its costs. We're trying to reduce them, but we can't eliminate them." Environmentalists of this stripe will increasingly

REPORTER ASSOCIATE *Alicia Hills Moore*

show up even within companies. William Bishop, Procter & Gamble's top environmental scientist, was an organizer of Earth Day in 1970 and is a member of the Sierra Club. One of his chief deputies belongs to Greenpeace.

Eager to work with business, many environmentalists are moving from confrontation to the best kind of collaboration. In September an ad hoc combination of institutional investors controlling $150 billion of assets (including representatives of public pension funds) and environmental groups promulgated the Valdez Principles, named for the year's most catalytic environmental accident. The principles ask companies to reduce waste, use resources prudently, market safe products, and take responsibility for past harm. They also call for an environmentalist on each corporate board and an annual public audit of a company's environmental progress.

The group asked corporations to subscribe to the principles, with the implicit suggestion that investments could eventually be contingent on compliance. Companies already engaged in friendly discussions included Du Pont, specialty-chemical maker H.B. Fuller, and Polaroid, among others.

Earth Day 1990, scheduled for April 22, the 20th anniversary of the first such event, is becoming a veritable biz-fest. "We're really interested in working with companies that have a good record," says Earth Day Chairman Denis Hayes, who predicts that 100 million people will take part one way or another. Apple Computer and Hewlett-Packard have donated equipment. Shaklee, the personal and household products company, paid $50,000 to be the first official corporate sponsor. Even the Chemical Manufacturers Association is getting in on the act, preparing a list of 101 ways its members can participate. The more than 1,000 Earth Day affiliate groups in 120 countries propose to shake up politicians worldwide and launch a decade of activism.

THE MESSAGE that leading environmentalists are sending, and progressive companies are receiving, is that eco-responsibility will be good for business. Says Gray Davis, California's state controller, who helped draft the Valdez Principles and who sits on the boards of two public pension funds with total assets of $90 billion: "Given the increasing regulation and public concern, there's no question that companies will eventually have to change their ways. The first kid on the block to embrace these principles will increase market share and profit substantially."

While that's hard to prove, few dispute that farsightedness today will pay off tomorrow. Environmental regulations will continue to be tightened. Says Lester Lave, a professor of engineering and public policy at the Carnegie-Mellon business school: "If you build a plant that just squeaks past now, you'll have to pay much more money down the line."

That is partly why Minnesota Mining & Manufacturing is going beyond the call of duty and government deadlines. For example, new federal regulations require replacement or improvement by 1998 of underground storage tanks for liquids and gases. The company decided to comply by 1992 instead, and to have all tanks worldwide in compliance by 1993. Cost: more than $80 million. "Regulations are about to overwhelm us," says Robert Bringer, 3M staff vice president for environmental engineering and pollution control. "The only way we see to deal with that is to reduce the number of materials we emit that trigger regulation."

Chastened in part by Exxon's example, some corporate bosses don't see red when faced with green activists—they see themselves. One of Edgar Woolard's first acts after becoming CEO of Du Pont in April (just after the Valdez spill) was to deliver a speech in London entitled—and calling for—"Corporate Environmentalism." Said the top man of the chemical giant in remarks subsequently reprinted by the company on recycled paper: "Avoiding

HOW ONE INVESTMENT FIRM RATES 25 COMPANIES ON THE ENVIRONMENT

INDUSTRY	COMPANY	RATING (1 = best, 5 = worst)	
CHEMICALS	H.B. Fuller	1.5	Environmental initiatives in HQ construction
	Monsanto	4.0	Pesticides, toxic dumps, offset by clean-air efforts
	W.R. Grace	5.0	Toxic dumps, several environmental lawsuits
COMPUTERS	Apple Computer	1.5	Recycles, lets environmental groups solicit on site
	IBM	3.5	High CFC emissions
ELECTRIC UTILITIES	Louisville Gas & Electric	2.0	Leader in installing smokestack scrubbers
	Southern	5.0	High SO_2 emissions contribute to acid rain
ENVIRONMENTAL SERVICES	Safety-Kleen	2.5	Leading recycler of solvents and motor oil
	Wellman	2.5	Leading recycler of plastic
	Browning-Ferris	5.0	Numerous landfill violations
	Waste Management	5.0	Numerous landfill violations
FOREST PRODUCTS	Jefferson Smurfit	2.5	Leading recycler of paper
	Louisiana-Pacific	4.0	Air and water pollution violations
NATURAL GAS	Consolidated Natural Gas	2.5	Promotes new, clean-burning technologies
	Panhandle Eastern	4.0	Substantial PCB pollution problems
OIL	Amoco	2.0	Strong waste-minimization program
	Exxon	5.0	Poor response to Valdez oil spill
PHOTO EQUIPMENT	Polaroid	2.5	Strong waste-minimization program
	Eastman Kodak	4.0	Substantial leaks in Rochester sites
STEEL	Nucor	2.0	State-of-the-art mills, uses recycled metals
	Bethlehem Steel	4.0	Old mills with numerous environmental problems
OTHER	Wal-Mart Stores	2.0	Promotes environmental products, recycling
	Borden	4.0	Toxic dumps, air and water complaints
	General Electric	4.0	Major PCB cleanup problems
	General Motors	5.0	Toxic dumps, air and water problems

Franklin Research & Development of Boston, which calls itself a "socially responsible" investment firm and manages $200 million, bases these ratings on several factors. Each company starts with a score of 3, which then rises or falls based on corporate actions that harm or help the environment.

BLAKE LITTLE—VISAGES

PG&E's Clarke: He has an environmentalist on the board.

environmental incidents remains the single greatest imperative facing industry today." He bemoaned industry's lack of credibility on the issue and called for spending more money than "mere compliance" with laws would require.

Woolard now meets at least once a month with leading environmentalists, and his company is taking what seem dramatic steps demonstrating its concern. In March 1988, Du Pont announced that, based on new evidence that chlorofluorocarbons (CFCs) might be seriously depleting the Earth's ozone layer, it would voluntarily suspend all production of CFCs—a $750-million-a-year business in which it leads the industry—by 2000, or sooner if possible. The company has already spent $170 million developing safe compounds to replace CFCs in cleaning, refrigeration, and other uses. It is prepared to spend as much as $1 billion on the best replacements discovered so far, but since even these compounds may slightly deplete the ozone layer, Du Pont wants guarantees that new plants will be allowed to function long enough to recoup the investment. Says Woolard: "In my opinion it has not been proven that CFCs are harmful to the ozone, but there is a fairly good probability, and we have to deal with that."

Evidence of increased environmental sensitivity is everywhere in Du Pont, perhaps partly because that's now one of the criteria in determining managers' compensation. The company voluntarily spends an estimated $50 million each year on environmental projects beyond what the law requires, like the $15 million it spent at a Texas plant to reduce the risk of dangerous gases being released. Du Pont's ultimate goal is zero pollution in all activities. While Woolard is certain this new priority will strengthen the company, he admits profits will suffer from the effort over the next few years.

Du Pont also sees business opportunity in environmental concern. Building on expertise gained in cleaning up its own plants, the company announced in early December the formation of a safety and environmental resources division to help industrial customers clean up toxic wastes. Management forecasts potential annual revenues of $1 billion from the new business by 2000. Defensive actions sometimes pay off too. Faced with protests over the ocean dumping of acid iron salts off the coast of New Jersey, Du Pont halted a practice its scientists were convinced was harmless. It then discovered the salts could be sold to water-treatment plants.

At 3M, CEO Allen Jacobson directs that pollution-control installations be judged by their environmental benefit, not only by return on investment. But 3M too has learned that environmental controls often lead to cost savings. The company specializes in coated products (such as videotapes and pressure-sensitive tapes) whose manufacture has long emitted significant pollutants. It has saved well over $1 billion since 1975 through a program called Pollution Prevention Pays. The program spotlights projects that reduce pollution as well as save money. Solvents that were once emitted to the atmosphere may be recycled and reused, or a volatile solvent may be replaced by a water-based one, eliminating the need for costly air pollution control equipment.

Du Pont's Woolard: He's making zero pollution a company goal.

JOHN S. ABBOTT

If, as many predict, alliances between environmentalists and corporations are the wave of the future, Pacific Gas & Electric has already learned to surf. But it took practice. In the mid-1970s economists and lawyers from the Environmental Defense Fund started fighting the company's plan to build several giant coal and nuclear power plants. The environmentalists proposed instead a combination of smaller-scale generating facilities like windmills or cogeneration plants on the sites of regional businesses, combined with aggressive conservation measures.

THE BIG PLANTS were never built. A persistent EDF campaign of pressure at utility commission meetings and sophisticated television advertising came just as the price of fossil fuels started climbing dramatically. PG&E's resistance gradually melted. The company took several steps to conserve energy, and much of the rest of the electric industry eventually followed PG&E's lead. Says EDF attorney David Roe: "We spoke to them in their own language. We used their type of computer models, their financial analysis sheets. We weren't saying, do what's good for the environment and it will cripple you. We were saying, it will save you economically."

While the company says it would have eventually taken most of the actions EDF proposed anyway, it acknowledges that the give-and-take was beneficial. Says PG&E attorney Kermit Kubitz: "I think both sides may have been closer together than either side realized at the beginning." Echoes Roe: "The basic point is, there's usually a lot more common ground than either side realizes."

Today PG&E has a policy of aggressively seeking discussions and joint projects with any willing environmental group, even those that have opposed the company in the past. Its board includes Melvin Lane, a well-known West Coast environmentalist. In November, PG&E announced a $10 million study, conducted in conjunction

with the Natural Resources Defense Council, among others, to improve efficiency in the use of electricity. And that computer model EDF developed to demonstrate the relationships between conservation and electricity costs—PG&E now rents it from EDF for about $18,000 a year.

PG&E chief Richard Clarke believes that on the rocky coast of Northern California, where quality of life has long been a paramount public issue, he has seen America's environmental mood foreshadowed. A few guiding principles Clarke has learned:

■ "Make environmental considerations and concerns part of any decision you make, right from the beginning. Don't think of it as something extra you throw in the pot."

■ "Develop an internal cadre of environmentalists. They have minds of their own and will advocate things. They may not get everything they want, but there certainly are occasions where they prevail."

■ "Have a continuing dialogue with environmental groups."

■ "Put someone on your board to help you factor in environmental issues."

■ "Do these things because they are the right thing to do, not because somebody forces you to do them."

McDonald's might add another principle

LEADING THE CRUSADE INTO CONSUMER MARKETING

There's money to be made catering to the public's mounting concern for the environment, as astute consumer marketers are beginning to learn. A July 1989 survey conducted for the Michael Peters Group, which provides consulting on products and design, found that 77% of Americans say a company's environmental reputation affects what they buy. Observes Howard Marder of the Hill & Knowlton public relations firm: "For the past 20 years the environmental movement in the U.S. has focused on cleaning up damage. Almost overnight the focus is changing to prevention. Marketers had nothing to sell before, but now they can say, 'Be part of the solution by buying our product.' " Among those now making just that pitch in the U.S.: Arco, Colgate-Palmolive, Lever Brothers, 3M, Procter & Gamble, and Sunoco.

ANDY FREEBERG

The Body Shop sells causes and cosmetics.

Marketers with experience abroad have seen France and Britain quickly catch up to West Germany and Sweden in the responsiveness of their populations to environmental marketing, and experts have little doubt the U.S. will soon follow. In mid-November, Procter & Gamble began test-marketing its first domestic product with an explicit environmental claim: Downy Refill comes in a 21½-ounce milk-carton-type container and is intended to be mixed with water in a used plastic Downy bottle to make 64 ounces of fabric softener. Prominently printed on the carton: "Better for the Environment . . . Less packaging to throw away." With a package 75% smaller, Downy Refill costs 10% less than regular Downy. It's too early to gauge the product's success.

For Wal-Mart, environmentalism is "a cause and not a marketing scheme," claims William Fields, the chain's executive vice president for merchandise. The giant discounter in July asked its 7,000 suppliers to provide it with more recycled or recyclable products. About 100 are already in stores, with labels (printed on recycled paper) explaining their supposedly beneficial features. K mart and at least a dozen small to medium-size grocery chains have announced similar programs. Experts suggest Wal-Mart and the others proceed slowly. Overeager green-marketing campaigns in Britain and Canada have been attacked by environmentalists for unsubstantiated or inappropriate claims.

The London-based Body Shop, with 14 outlets in the U.S., puts environmental concerns at its core and in the process finds its way to the green in customers' pockets. The skin- and hair-care stores display literature on ozone depletion next to sunscreens and fill their windows with information on issues like global warming. Every employee is assigned to spend half a day each week on activist work. Customers get discounts if they bring their old bottles back to the store for recycling. In 1988 the chain collected over a million signatures in Britain on a petition asking Brazil's President to save the rain forests. In 13 years the Body Shop has opened 420 stores in 38 countries. Sales for the year ended February 1989 were over $90 million with pretax profits of about 20%.

Make sure your green-marketing claims amount to more than a fig leaf. British Petroleum got flak recently for promoting a new brand of unleaded gasoline in Britain with the claim that it caused "no pollution." It later apologized for what it called an inadvertent error. A plastic grocery bag used by some New York supermarkets says: "This 'Earth Sack' will begin degrading within 3 days of exposure to ultraviolet light . . . and will continue the process until it turns into a nontoxic environmentally safe dust." Scientists believe the statement can be misleading, and in landfills light can be in short supply anyway. Some environmentalists have targeted "degradable plastics" for protest.

In general, the more you tell your customers, the better off you'll be. Procter & Gamble environmental chief Geoff Place visited his brother's family in England recently and found them no longer using several P&G products because of environmental concerns. Later a family member told Place they'd started using Fairy Dishwashing Liquid again because P&G had improved it. In fact the company had simply added a statement on the label saying "Only biodegradable surface active agents are used in this product." That has been true since 1963.

to the list: Educate your customers incessantly. Faced with growing protests over the volume of waste it generates, especially the polystyrene foam packaging used for hot food, the restaurant giant has taken major steps to reduce waste at the source, to recycle what's left, and to explain what it is doing. Just by making its drinking straws 20% lighter, the chain eliminated one million pounds of waste per year. In October, McDonald's began collecting polystyrene waste in 100 New England outlets and recycling it; the company intends to include all 450 regional stores in the plan by March. Customers are asked to put polystyrene containers, such as those for Chicken McNuggets or Big Macs, in special bins. All napkins in U.S. stores are now made from recycled paper, as are carry-out drink trays and office paper at headquarters.

Shelby Yastrow, the company's general counsel and point man on environmental issues, says that since polystyrene is 100% recyclable, it is better for the environment than paper, which theoretically degrades but most commonly ends up in anaerobic landfills—virtually no oxygen gets through—which may instead preserve it for decades. Paper is also significantly bulkier than plastic in most uses, thus creating more waste. "Everything I look at tells me plastic is better," says Yastrow. "I have a little trouble convincing my children or my neighbors, but the scientific community isn't a problem."

To correct the misconceptions of those kids and neighbors and their peers nationwide, the company is embarking on a major educational campaign. McDonald's is describing its efforts and explaining recycling on the paper liners on customers' trays, in advertising, in brochures it hands out in stores, and in mailings to school teachers. That's a lot of describing and explaining: McDonald's serves 18 million customers in the U.S. each day, making its tray liners alone one of the largest of the nation's mass media.

EVEN IF IT IMPROVES public understanding of solid waste, McDonald's will continue to confront one of the nagging realities of the new environmentalism: Grass-roots local groups, many of them misinformed, wield increasing disruptive power. Says David Stephenson, a Boston public relations consultant who specializes in corporate environmental strategy: "The grass-roots groups are concerned about the value of

their homes and the health of their children. That means they are relentless. In general, unlike the mainstream environmental groups, they are not interested in compromise or mediation." McDonald's successfully confronted antipolystyrene picketing at several of its Vermont stores with an aggressive local educational campaign. By the end, local activists were asking that the company convert its paper cold-drink cups to plastic.

ONE LESSON from the company's experience: Don't ever assume you've solved an environmental problem. As knowledge evolves, attitudes change, and so do solutions. McDonald's switched from paper to polystyrene packaging for Big Macs and other sandwiches in 1976 largely because the public was worried about cutting trees and the energy that paper production consumed. As recently as the early Seventies, CFCs, one of today's leading environmental villains, were believed to be a harmless and inert triumph of modern chemistry.

You have to keep looking ahead—way ahead. For gutsy environmental farsightedness, few companies can top Applied Energy Services. The private, Virginia-based power-plant management firm donated $2 million in 1988 for tree planting in Guatemala to compensate for a coal-fired plant it was building in Connecticut. The trees, which of course consume carbon dioxide, are intended to offset the plant's emissions of the gas, which may lead to global warming. Says CEO Roger Sant: "We pride ourselves on being part of the solution, not part of the problem. We weren't trying to do any more than salve our own guilt, I guess." The company expects to couple tree-planting programs with all seven new plants on its drawing boards. Several large outfits have contacted Sant to ask his help in refining similar plans.

One recent weekday afternoon, three men walked out of the Environmental Defense Fund's midtown Manhattan office on their way to have lunch together. On the left was EDF's senior economist. On the right was an environmental expert in the Soviet government. Between them was a businessman, a trader in the nascent enterprise of buying and selling pollution rights. Together that trio forms a picture of how the new environmentalism is shaping up: global, more cooperative than confrontational—and with business at the center. F

YOU CAN MAKE MONEY IN JAPAN

The market is more open than before. Now it's merely tough. Keys to success include hoards of cash, patience—and a little table pounding. ■ *by Carla Rapoport*

IT'S NOT FAIR. Japan can take over market after market in the U.S., and American companies can't sell anything there. The Japanese can buy Rockefeller Center and half of Los Angeles, but Americans are shut out of whole sectors in Japan, like construction, telecommunications, and cars, right? A verbal swipe at Japan's closed market will get you cheers and applause from college campuses to union halls.

The reality is becoming much different. Years of U.S. pressure has begun to pay off, though the perception has yet to penetrate the American consciousness. "This isn't the same country it was five years ago," says Joel Silverstein, general manager of Brown & Williamson (Japan), importer of U.S.-made Kent and Lucky Strike cigarettes. U.S. companies are starting to take market share not only in the consumer products shown on these pages, but also in semiconductors and financial services.

With scant exceptions, such as rice imports, foreign companies are no longer excluded by law, regulation, or tariff from any area of business in Japan. Americans are not prevented from acquiring Japanese companies or buying real estate.

That doesn't mean you can send boatloads of stuff over and expect it to walk off the docks. "Japan has changed from being a closed market to one that's just tough," says Richard Foyston of Boston Consulting Group's Tokyo office. Adds an American who has spent years in the trenches of the U.S.-Japan trade wars: "There are barriers in Japan in terms of attitudes, not laws. Still, things are definitely getting better. You can do business here if you have enough time and money."

Cultural biases aside, Japan remains a difficult market because many of its sectors, like telecommunications, financial services, and construction, remain heavily regulated. The rules apply to all companies, Japanese included, but the Japanese have the advantage of long-established relationships.

With cash to invest, patience, and a little table pounding, Americans are breaking in. Motorola will soon be selling cellular phone equipment throughout Japan, in part because of pressure from U.S. Trade Representative Carla Hills. Two consortiums, one including Britain's Cable & Wireless and Pacific Telesis, among other U.S. companies, have begun offering discount international telephone service in competition with the government monopoly. Hughes Aircraft is a major investor in JCSat, one of Japan's new satellite communications companies. Ford, Hughes, GE, and others have been busily supplying the country's telecommunications industry.

Japan's clubby construction industry is cracking. Turner Corp. of New York City is building an $86 million Tokyo office block with Kumagai-Gumi, the local construction giant. New York's Tishman Realty & Construction Co. and Japan's Aoki are putting up a $175 million hotel in Osaka.

As a result of more pressure from Washington, a dozen or so public sector projects have been opened to U.S. bidders. Bechtel Group, the huge U.S. construction company, is part of the consortium building a terminal for the $6.1 billion expansion of Tokyo International Airport at Haneda.

It used to take about two years to get a license to do construction work. With help from the U.S. embassy in Tokyo, it

WHAT SOME AMERICAN GIANTS REAP IN JAPAN

COMPANY	SALES* in millions, fiscal 1988
IBM	$8,800
Exxon	$6,700
Mobil	$5,900
Coca-Cola	$3,400
Caltex	$2,600
Du Pont	$791
Eastman Kodak	$750**
Motorola	$750**
Caterpillar	$741
Texas Instruments	$706
Hewlett-Packard	$613
NCR	$536
McDonald's	$535
Amway	$522
Digital Equipment	$510
General Electric	$506
Dow Chemical	$486
Pfizer	$438

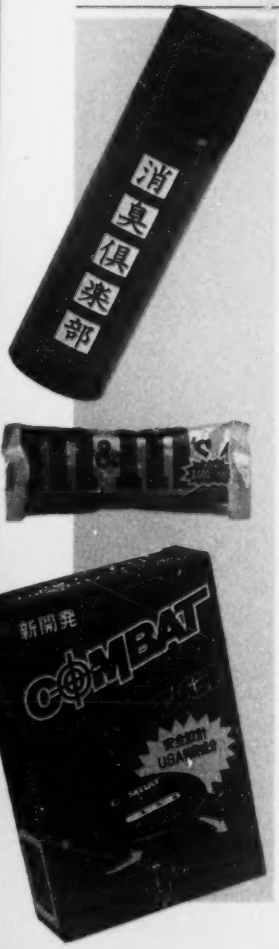
*Adjusted to exclude Japanese share of joint ventures.
**FORTUNE estimate.

SOURCE: ASIA ADVISORY SERVICE

Sales of most U.S. companies in Japan comprise both imports and locally made goods. Profits are high.

TARO YAMASAKI

Amway imports most of what it sells in Japan. Destined for Japanese buyers, nail polish rolls off the line in Michigan.



can be done in three to six months. Says an embassy official: "In this market U.S. government and U.S. business have to work hand in hand. That's the way Japan works—we have to do it too."

THOUGH TOKYO'S financial markets remain more regulated than New York's or London's, foreigners now have as much room to maneuver as the locals. They gained access to the floor of the Tokyo Stock Exchange in 1986, and this spring will be able to manage investment trusts and pension funds. American Express expects to have one million cardholders in Japan by the end of this year. Cards and travel services are growing between 20% and 30% a year. Equitable Life, after just four years in Japan, expects to triple revenues this year to $235 million. "This is a magnificent consumer banking market," says James Collins, chief executive of Citibank's North-Asia division. Then, like a proud parent, he pulls out pictures of the Citicorp Center building, under construction near Tokyo Bay.

Government bond sales are now open to public auctions. Tax breaks enjoyed by the government's huge Postal Saving Bank were eliminated in 1987. Salomon Inc. is among the top ten firms dealing in Japanese government bonds and the top 20 in Japanese equities. Says Salomon's Tokyo chief, Deryck Maughan: "When we increased our capital by $300 million three years ago, everyone asked us what we were doing—showing off, buying someone, or what? We were simply taking the biggest financial markets in the world seriously."

Even in electronics, where the fiercest trade battles have been fought, U.S. companies are gaining. Their share of the Japanese semiconductor market has risen from 8.5% in 1986 to 11.1% for 1989. Wilfred Corrigan, chief executive of LSI Logic and head of the U.S. Semiconductor Industry Association, has commended Japan's recent buying efforts.

Applied Materials, a producer of semiconductor fabrication equipment, made 40% of its $502 million 1989 sales in Japan. This year the company thinks that percentage could rise to 50%. Microsoft, only three years in Japan, occupies a sprawling set of offices in a high-rise in Tokyo's glitzy Shinjuku district. Susumu Furukawa, a 35-year-old computer whiz who is president, says Microsoft had sales of $64 million last year. He expects annual growth of 35% to 45% for the next few years, and he adds, "But that's conservative."

AMERICAN direct investment is growing. It increased to $16.7 billion in 1988, nearly double the amount in 1985, though only about a third of what the Japanese invested in the U.S. In electronics alone, some 360 U.S. companies have offices in Japan and employ more than 72,000 people. That compares with 139 Japanese electronic firms in the U.S. employing about 68,000.

Will any of this affect the trade deficit? A little. U.S. exports to Japan rose 15% in the first 11 months of last year to $44 billion, and Nomura Research Institute expects them to rise at least another 18% in 1990. Nomura forecasts that the trade deficit, which reached a high of $56 billion in 1987 according to U.S. figures, could shortly drop to around $43 billion.

Largely because of the strength of the yen against the dollar, U.S. operations in Japan are enormously profitable. Both sales and profit growth rates are exceeding those at home, or indeed anywhere else.

Mobil and Exxon say they earn about 10 cents a gallon on gasoline sales, vs. an average of 2 cents for the Japanese industry as a whole. IBM Japan is growing faster than the company is in the U.S. and contributes more to profits than any other subsidiary. AIG, the diversified financial giant, earns $20 on every $100 worth of business its Japanese subsidiary writes. This makes the unit AIG's most profitable in the world. And AIG's headquarters in central Tokyo is worth close to $1.5 billion.

Coca-Cola earns more selling soda in Japan than in the U.S. Japanese soft-drink sales account for 21.5% of Coke's worldwide profits, compared with 18.6% for the U.S., says Paine Webber analyst Emanuel Goldman. Profit per gallon, he adds, is four times as high as in the U.S.

According to a survey by the Ministry for International Trade and Indus-

REPORTER ASSOCIATES *Frederick Hiroshi Katayama and Ret Autry*

PRODUCTS PHOTOGRAPHED BY TAKESHI YUZAWA

try (MITI), Japanese corporations had profit margins in 1988 averaging 2.8%. By contrast, foreign companies in Japan had margins of 6.8%, up from 2.3% in 1982. Says Jerald Blumberg, a vice president of Du Pont in Tokyo: "Costs are high here, but we're importing 60% of what we sell from U.S. plants." That gives Du Pont a boost because of the strong yen.

MANAGERS of U.S. companies in Tokyo sometimes sound like spokesmen for the Japanese government. William Franklin, head of Weyerhaeuser Japan and president of the American Chamber of Commerce in Japan, believes America's huge trade deficit with Japan has two origins: declining U.S. competitiveness and Japan's longstanding resistance to imports. "At this point," he says, "it's fair to say they've made a better start on their part of the problem than we have on ours." Adds Edmund Reilly, president of Digital Equipment Corp. Japan: "You'd be surprised. When a group of Americans here get together to talk about problems, we don't discuss unfair trade practices; we end up talking about problems with our home offices." He doesn't want to get specific, but other executives say such problems include overeagerness to pull profits out of Japan instead of investing in expansion.

IBM is the biggest U.S. presence in Japan, but Coca-Cola's success is in some ways more implausible. Both came early, but IBM brought technology the Japanese needed. The technology of making soft drinks hasn't changed much since Dr. Pemberton, an Atlanta pharmacist, invented Coke in 1886, and there were plenty of competitors in Japan who knew how to do it.

Coke has 91% of Japan's cola sales and 57% of the market for all carbonated drinks. Coke managers got there by treating their competitive battle with Suntory, Asahi, Kirin, and other Japanese beverage giants like war. Says Douglas Daft, the Australian who is president of Coca-Cola Japan: "I'd be removed if I started to congratulate myself." Coke is even in the coffee business, with Georgia Coffee, a sugary-sweet drink that is one of the company's fastest-growing and most profitable products.

A serious, somber man, Daft brightens when talking about how fast Japan is changing. "What you have here," he says, "is a consumer capable, willing, and able to spend. Japan is becoming a real consumer society." Does he expect more U.S. competitors? "Can Pepsi and 7-Up become big here? Yes, they can. It's a very, very large market."

Japan's rigid distribution system used to shut out foreigners, but it is now opening. Mars has developed its own sales force instead of relying on Japanese agents. Levi Strauss, the jeans company, has built its own distribution center. Amway, Avon, and Tupperware have managed to transplant their direct-sales methods to Japan. Amway is ranked as the seventh-fastest-growing company in Japan by *Diamond Weekly*, a respected Tokyo business publication. A third of its worldwide sales ($1.9 billion last year) are in Japan. Avon does $277 million a year in sales.

U.S. retailers are moving in. Tower Records will soon have 11 outlets throughout Japan. Toys "R" Us, in an 80/20 joint venture with McDonald's Japan, plans to open six stores by 1992 and 100 within ten years. "We expect they will be our top-selling stores," says Joseph Baczko, Toys "R" Us international chief.

In cigarettes the share of the $24 billion market held by foreign companies has jumped from 2% to 14% since 1985, when the market was fully opened to foreigners. Philip Morris, with 8% to itself, predicts foreigners will capture 30% of the business within five years.

American pharmaceutical companies have about 20% of the $30-billion-a-year Japanese market. Only half of that involves licensing, as an increasing number of U.S. companies switch from royalty deals to wholly owned subsidiaries. Merck's purchase of 51% of Japan's Banyu in 1983 has been a blockbuster success. Sales and profits have more than doubled since the acquisition, and Banyu is one of the fastest-growing drug companies in Japan.

WHILE U.S. FIRMS in the past often entered Japan in partnership with local companies, most prefer to operate today through their own subsidiaries. In addition to pharmaceutical firms, Johnson Wax, Procter & Gamble, Eastman Kodak, and

AMP, a maker of electronic components, is growing rapidly in Japan. Robots abound in this plant southwest of Tokyo.

TAKESHI YUZAWA

To launch its cockroach killer, American Cyanamid ran a contest to find the biggest roach in Japan. This Okinawa woman won a weekend in Tokyo. Combat won a big share of the market.

Mars have all cracked the Japanese market on their own despite the high costs involved.

Kodak did it by acquiring the small individual companies that distributed its products, a painstaking process that took about 18 months. Sales should reach $1 billion this year, a fourfold increase in the past five years. Kodak has 25% of Tokyo's amateur film market, and about 15% of the market nationwide. Since sales of cameras lead to film sales, the company has introduced two new disposable models. Sold in tourist spots, even shrines, these throwaway cameras are good for one roll of film and cost about $10. Although Japanese competitors have been quick to follow with their own versions, Kodak's results so far are gratifying. Railway station kiosk operators, who have traditionally shunned foreign products, are starting to ask for the cameras.

ADVERTISING campaigns that have done well at home have been successfully transplanted to Japan. American Express translated its famous "Do you know me?" campaign into Japanese, keeping Jack Nicklaus and his golf clubs. Coke's "You can't beat the feeling" was altered to "I feel Coke" and is one of the most effective TV ads in Japan. American Cyanamid brought its kooky Largest Cockroach in America contest to Japan last year to launch Combat, its cockroach killer. The company spent $100,000 on the contest and got millions in free TV coverage. A woman from Okinawa produced the biggest roach. She won $700 and a weekend in Tokyo. Combat won 25% of the roach insecticide market in the first four months of sales.

Except for using their U.S. ads, successful American companies in Japan have made themselves as Japanese as possible. Their managers understand that Japanese employees need a sense of mission. Whether he is American or Japanese, the *shacho*, or president, must have a message that he preaches whenever he can, posts on bulletin boards, and prints in company brochures. This message can be almost anything—selling the world's best products or killing the competition or making a better world or all three. Executives at NCR Japan, for example, which expects sales of $1 billion next year, talk constantly of growth, market share, and their latest technology. The office ladies at NCR wear uniforms and serve tea just as at any local company. Are there women managers in the company? "This is a Japanese company," comes the sheepish reply.

AMP Japan, subsidiary of the Pennsylvania electronic component company, is so Japanese in culture that its Japanese PR officials scold Americans for seeking interviews in English. President Mark Komatsu, who was born in Japan but educated in the U.S., can do them either way. The unit's sales have been growing at a compound rate of 15% for the past 20 years.

Surely, you say, Japan's car market remains sealed like a drum. Not true. The final trade barrier, a stiff luxury tax on big cars, was dropped last April. Car imports have jumped from 68,000 in 1986 to 182,000, or about 4.5% of the market, in 1989. Foreign automakers are forecasting a 10% share by 1995. But here's the bad news for Detroit. About 90% of this success has been scored by European automakers.

After getting nowhere with Japanese dealers or import agents, the Europeans began setting up their own dealerships in the early 1980s. BMW, with 120 outlets in Japan, expects to sell 36,000 cars this year, worth $1 billion. Audi, Volkswagen, and Citroën are coming up fast. Faced with this success, Japanese dealers are starting to change their tune. Some Mitsubishi Motors dealers will start selling Mercedes-Benz trucks and buses this year.

LAST SUMMER Ford bought a 34% stake in Autorama, a nationwide dealership network controlled by Mazda. Sales of Ford cars rose from 53,000 in 1988 to 75,000 last year. Most of those cars were made by Mazda in Japan, but the figures also include a sharp rise in direct imports. Bob Paske, managing director of Autorama, expects that sales of Taurus and Probe will increase from 5,500 in 1989 to 8,000 this year. Says Paske: "The only barriers are invisible ones such as attitudes and traditions. The Japanese know that their cars have an international reputation for quality. But we are a young, aggressive company. Our prospects are very exciting."

The number of American companies setting up shop in Japan is growing almost daily, and their successes are no longer the exceptions that prove the rule. Anyone contemplating a move there can go for the Lee Iacocca school of thought: "Japan is a rigged market. If you don't believe that, you're living on another planet." Or he or she can listen to the scores of companies that are making it in Japan. Take James Collins at Citibank: "Barriers? Not a single one that matters. Japan is now one of the most attractive markets in the world." F

■THE TAX BATTLE • CAN U.S. CARS COME BACK? • A VACCINE FOR AIDS■

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FEBRUARY 26, 1990

FORTUNE

FEAR AND LOATHING OF JAPAN

■ Why it's growing
■ Why it's dangerous
■ What to do about it

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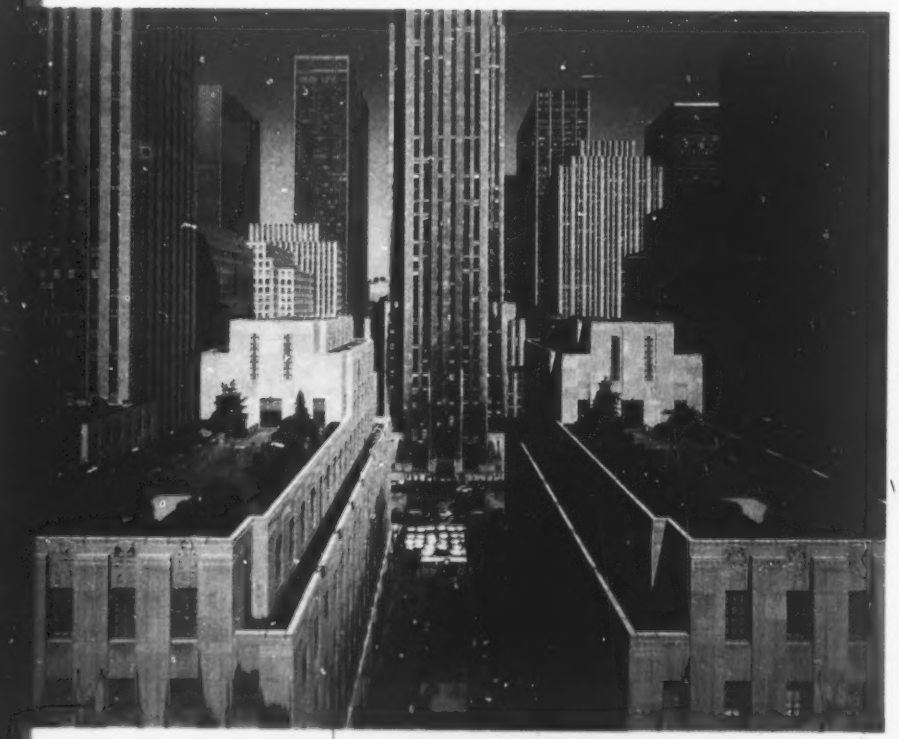

"If a Japanese buys a building in the U.S., we see it as an invasion. If he takes it apart brick by brick and carries it back to Japan, we call that trade." PAGE 50

ABOVE: A Japanese company caused an outcry by buying into Manhattan's Rockefeller Center, photographed by Ezra Stoller—Esto.

COVER: American business's view of Japan, painted by Joo Chung.

JAPAN/Cover Story

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For too many Americans, the Japanese have become the people it's okay to hate. In some precincts a whiff of McCarthyism is in the air. The danger is that the spiral of rising passions on both sides will lead to restrictions on investment, tariffs and embargoes, interest rate battles—the real economic war that people only hallucinate about now. *by Lee Smith*

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As America cuts out fat, McDonald's tackles its toughest food fight ever by serving the favorite evening restaurant dish. *by Ronald Henkoff*

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"The Japanese have taken as much time as possible to yield as little as possible. That forfeits good will."
PAGE 54

"He's got steel in his spine. He works like the dickens. And besides that, he's the smartest man I've ever met."
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"Fast food is not fast enough anymore. People say, 'I can heat something at home in 90 seconds by zapping it.'"
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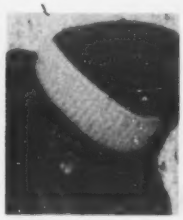

"Our public space has been taken over by the poorest of the poor in a way not seen since the Depression."
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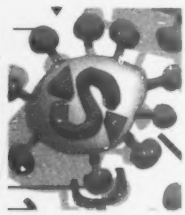
"Larry is lurking in the weeds, waiting for the multiples to come down, and then he will strike."
PAGE 99



"The issue of *whether* we can obtain an AIDS vaccine has changed to *when* we can get a vaccine."
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It has been unpopular, unpleasant, and unlivable for, oh, at least 100 years. The social and economic problems now seething in the city—crime, illiteracy, and homelessness; drug abuse and AIDS; the high costs of living and doing business—will test it more severely than at any time since the mid-1970s. But the ties that bind business to the place will not soon dissolve. *by Andrew Kupfer*

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There's real hope after all: A genetically engineered vaccine that will call forth a protective immune response to the chameleon virus could be here by 1993. Other drugs available sooner should slow or even stop the disease without AZT's side effects. *by Gene Bylinsky*

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EDITOR'S DESK

RHODA BAER

Smith and Reese in Washington, where a Japanese family gave $1.5 million to this museum wing

HOW DO YOU view Japan? Economic ally or sly invader? Benevolent investor or owner of our children's future? Take a poll of most Americans and you find that they think Japanese in pin stripes are really samurai at heart.

Fear and loathing of Japan has come out of the closet. The sense of invasion struck home last fall when Mitsubishi Estate Co. bought into the Rockefeller Center complex in Manhattan, which houses the FORTUNE offices. Many New Yorkers felt they were losing part of their patrimony, but emotions ran far more broadly than that. An editor traveling in Missouri found that the Japanese investment was raising blood pressures even there. When a reporter passing through customs in Honolulu presented a claims form listing our address, the clerk piped up: "You know, *they* own it now."

CAROLINE PARSONS

Carla Rapoport in Tokyo

No one is better equipped to assess the rising anti-Japanese sentiment than Lee Smith, who wrote our cover story with help from reporters Jennifer Reese in Washington and Susan Moffat in Tokyo. Now Washington bureau chief, he was from 1983 to 1985 our top man in Tokyo, where he wrote on such subjects as the Japanese work ethic and the blossoming of creativity in a nation that was once thought merely imitative. In this story he probes the American psyche for the source of our attitudes and exposes myths that blame Japan for our own shortcomings.

In Tokyo, international editor Donald Holt and Carla Rapoport, now our bureau chief there, interviewed Michael Armacost, the U.S. ambassador. Much must be done, he says, to persuade Japan to open its markets more widely. But he finds the new American feelings "dangerous." The worst outcome would be if we deluded ourselves into thinking Japanese unfairness is responsible for our competitive failures. For the Japanese are beating us by saving, investing, educating, and working hard—the very qualities Americans have long been proud of and need to return to.

EXECUTIVE EDITOR

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FEAR AND LOATHING OF JAPAN

For too many Americans, the Japanese have become the people it's okay to hate. That attitude fosters self-delusion about U.S. flaws. If unchecked, it could hurt everybody. ■ *by Lee Smith*

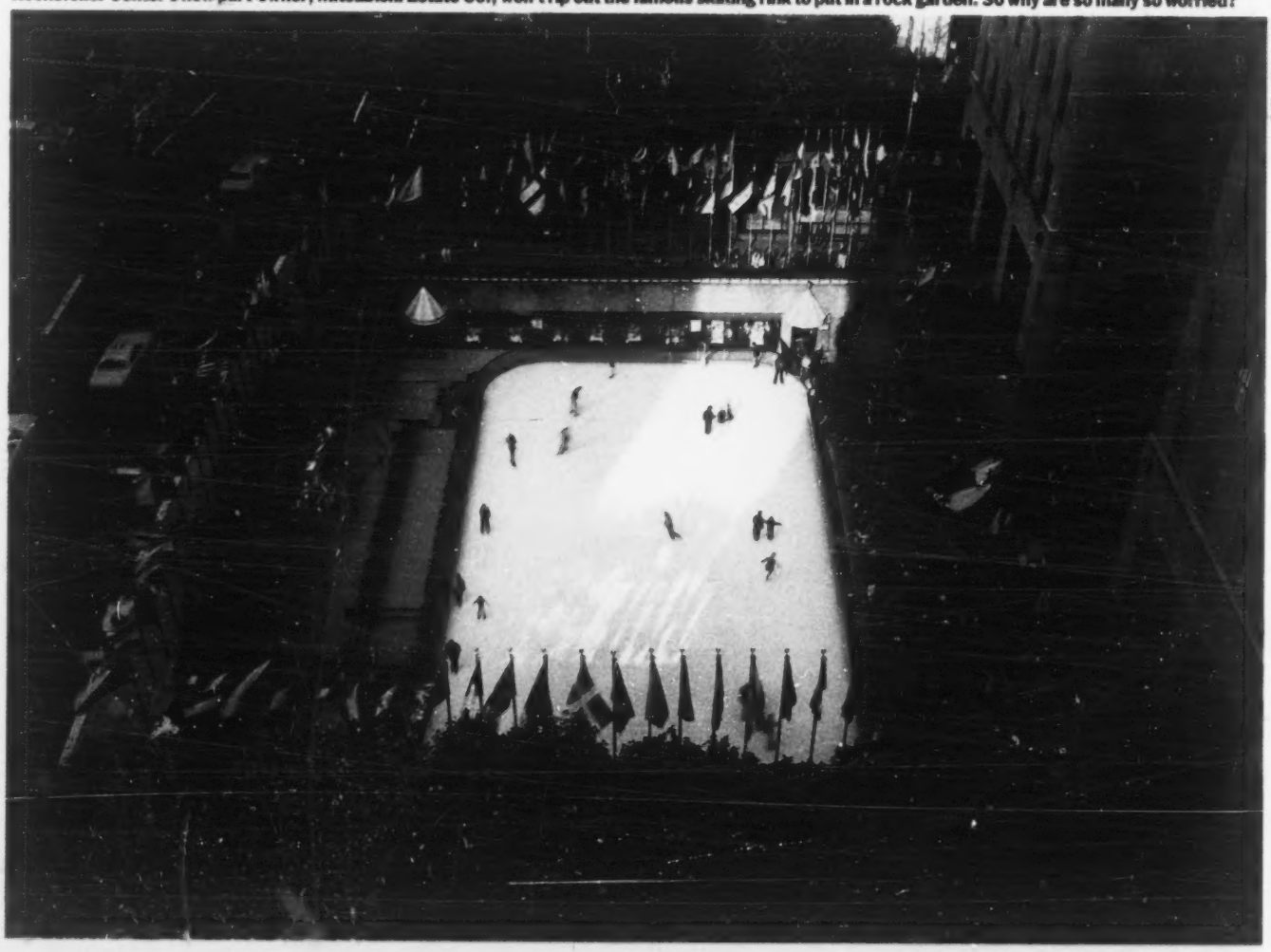
The United States is rapidly becoming a colony of Japan.

—Representative Helen Bentley

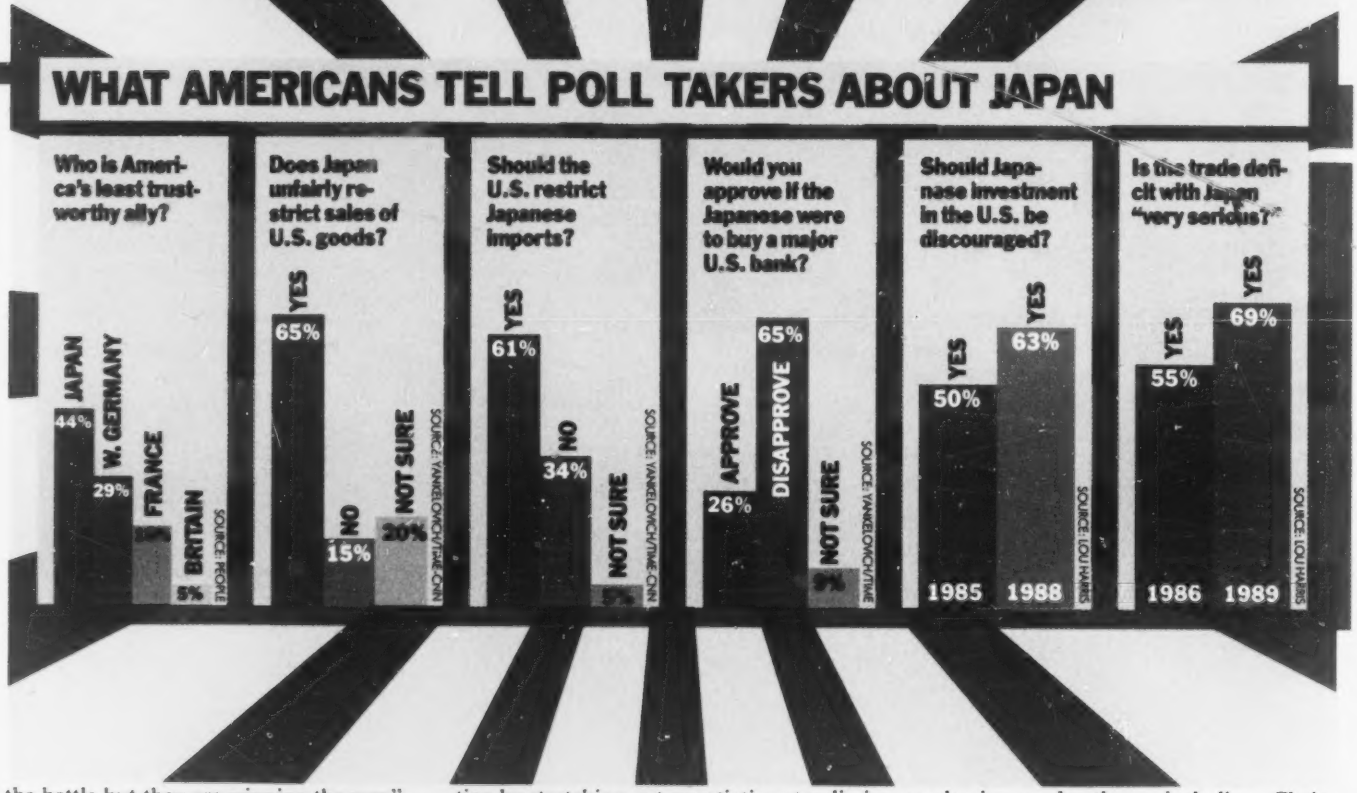
The American voice quivers with anxiety. It cracks with spitefulness: "They've got our beaches and our buildings. Now they're going after our brains. They are taking us over." What is it the Japanese have scratched in the confident Yankee psyche that makes the sound come out so intolerant, so frightened, so, well, un-American?

When Mitsubishi Estate Co. bought control of Rockefeller Group—which owns parts of Rockefeller Center—last fall, commentators seemed to see Zeros dropping out of the clouds. The Fox television station in New York City ran a film showing the attack on Pearl Harbor. Dennis Duggan, a *Newsday* columnist, interviewed a veteran of the Bataan death march who said, "We won

Rockefeller Center's new part-owner, Mitsubishi Estate Co., won't rip out the famous skating rink to put in a rock garden. So why are so many so worried?



ERIK STOLLER—ESTO



the battle but they are winning the war."

What war? Listening to Helen Bentley explain the flow of Japanese money to the U.S. is to hear a twist on the horror movie *Invasion of the Body Snatchers.* Says the Republican Congresswoman from Baltimore: "Japanese banks lend money to our companies so they can get inside and look at the books. They discover the weaknesses, exploit them, and demand 20% of the company in exchange for a rescue."

Suddenly the Japanese have become the people it is okay to hate. Growl at any other race at a New York or Washington salon, and your dinner partner turns away in embarrassment. Deride the Japanese, and hear your table mates cheer and pile on with abuse of their own: "It's outrageous that they can buy Rockefeller Center and we can't buy their real estate," or "They dump their products here, but their markets are closed to us." Both assertions wildly distort reality (for more myths and half-truths, see page 53).

JAPAN BASHING has been going on for a decade or so, but lately the intensity has reached stunning proportions. The U.S. does have legitimate complaints. Japan's export-led growth policy was not only defensible but sensible as well in the early postwar period. However, the government stayed with it long after huge trade surpluses set off warning signals all over the world. Japan exacerbates the situation by stretching out negotiations to eliminate import restrictions as long as it can. Says U.S. Trade Representative Carla Hills: "When you finally get a concession, you don't have that good feeling."

But clearly Japan is not an enemy. The extraordinarily complex military, political, financial, and trade relationship between the two countries has stabilized the North Pacific and elevated living standards on both sides of it. And the U.S. has contributed to the problem with bad habits of its own, such as saving too little and allowing large portions of American business to grow uncompetitive (for the situation in one industry, see Autos). The danger is that the spiral of rising passions on both sides will lead to restrictions on investment, tariffs and embargoes, interest rate battles—the real economic war that people only hallucinate about now.

Anti-Japan feeling used to be a largely blue-collar phenomenon, ignited by job losses in autos and steel. Auto workers smashed Japanese cars. In 1982, a Chinese American was beaten to death outside a Detroit bar, his assailants having apparently assumed he was Japanese. Lately such antipathy has subsided, partly because Japanese producers started building cars in the U.S. (UAW headquarters has removed a sign advising visitors to park their foreign vehicles elsewhere.)

Now white collars are taking over the battle. An intellectual patina comes from the so-called revisionists, a school of journalists, academics, and others, including Clyde Prestowitz, a former U.S. trade official and author of *Trading Places: How We Allowed Japan to Take the Lead*; James Fallows of the *Atlantic*; Chalmers Johnson, a professor at the University of California at San Diego; and Karel van Wolferen, a Dutch correspondent in Tokyo who has written an influential book excerpted in FORTUNE last year and much talked about in the U.S.

THEY take their name from having revised what they see as the traditional view, held by many old hands in the State Department, that since Japan is rapidly becoming more like us, most of our problems will fade away if we just keep up pressure for reform. The revisionists don't fantasize about kamikaze attacks on the U.S. economy. They argue that Japan is neither righteous nor wicked, just different, and will never have a free market like that of the U.S. The only answer is managed trade. Maybe we should put tariffs on Japanese imports, says Fallows. We should create an American Department of International Trade and Industry to coordinate economic policy, says Johnson. It's a seductive vision that adds up to protectionism and industrial policy.

In some precincts a whiff of McCarthyism is in the air. Self-appointed watchdogs compile lists of academics and lobbyists who take Japanese money, as though the recipients were collaborating with an enemy power. A dozen Congressmen, including House

STEVE PROCHNOW

Bemoaned by U.S. competitors, shiploads of Japanese goods have made them shape up.

Majority Leader Richard Gephardt, sent a letter to President Bush complaining that a consultant to his Council of Economic Advisers, University of Michigan economist Gary Saxonhouse, has also advised a research institute funded by Japan's Ministry of International Trade and Industry.

A RECENT cover story in the *New Republic* detailed how Japanese are spending hundreds of millions of dollars to finance research in the U.S. and buy up Washington's top legal and lobbying talent, "creating a subtle climate of corruption." Prestowitz agonizes over the plight of Salem College, a failing West Virginia institution that has merged with Japan's Teikyo University to stay afloat. Salem-Teikyo plans a student body of about 1,000, half from the U.S. and half from Japan and elsewhere. "It's weird," says Prestowitz. "We used to export philosophy. Now we import it."

Are these causes for alarm? Hardly. At least a dozen American universities, including Stanford, have campuses in Japan. Saxonhouse's unpaid consulting work, involving oligopolies and exchange rates, was so abstruse that it won't help anyone sell machine tools. Saxonhouse reckoned that what he was doing was patriotic, since the National Science Foundation encourages scholars to take part in Japanese projects.

The specter raised by the *New Republic* is of a sinister and united Japan Inc. manipulating Congress to work against America. The reality is that, like most pleaders, those working for the Japanese are usually advancing one set of American interests, say those of consumers, against another, such as those of producers seeking to avoid competition. There is no evidence that the Japanese have persuaded legislators to do what

JAPAN AND THE U.S.: MISINFORMATION AGE

A cloud of myths and half-truths dim America's vision of the Japanese. Among the most common:

■ Japanese can buy Rockefeller Center, but Westerners can't own property in Tokyo.

Coca-Cola, IBM, Eastman Kodak, SmithKline, and insurance giant AIG, among others, all own major office buildings, laboratories, or factories in Japan. AIG's 15-floor headquarters, overlooking the Imperial Palace grounds, is worth $1.5 billion. Many American citizens own homes.

■ Sony takes over CBS Records and Columbia Pictures, but foreigners can't acquire Japanese companies.

It's true that a lot more investment is flowing west. Companies don't change hands often in Japan, even among the locals, and hostile takeovers are rare. But there are no major legal hurdles. Merck acquired Banyu and turned it into one of Japan's fastest-growing drugmakers. Ford owns 24% of Mazda, and Chrysler has an 11% stake in Mitsubishi. Foreign investors own 14% of Sony's shares.

■ While the Japanese gobble our markets, they keep foreigners out of theirs.

Most Japanese tariffs and quotas have been eliminated, as have tedious inspection and modification procedures that kept goods sitting on the dock. Imports, including a lot of BMWs, were up 35% last year. Among the remaining complaints: 17 Japanese companies have bought U.S. supercomputers, but the government has yet to buy more than one.

■ They hire former U.S. officials to lobby in Washington, but Japanese won't work for Americans in Tokyo.

Salomon Brothers has a former MITI vice minister and a former senior official at the Ministry of Finance on its payroll. Hideo Yoshizaki, chairman of Texas Instruments Japan, was a deputy director at MITI.

■ The money Japan has saved on defense has built its industry.

Some economists agree those savings have helped a bit. But if Japan had developed a big defense industry, it probably would have cut deeply into U.S. arms exports worldwide. Anyway, a major mission of F16 fighters at Misawa, Japan, during the 1980s has been to keep an eye on bases around Vladivostok, home of Soviet submarines capable of firing nuclear missiles at the U.S. West Coast.

■ Japanese auto plants in the U.S. merely assemble parts made in Japan.

The Japanese are increasing their local content. It is expected to reach 67% this year. At the same time, U.S. automakers are importing more parts from Mexico and other foreign plants.

they would not otherwise have done.

Just what Americans fear in the Japanese is complicated to sort out. Among other things, some seem worried that Japan has a grand design, maybe to dominate the world economy, maybe to humiliate the West. This theory is rooted in the belief that though the West won World War II, the Japanese never really quit but only changed weapons—a dramatic enough idea to have caught the fancy of some surprising people. Historian Arthur Schlesinger Jr. recently wrote in the *Wall Street Journal*: "Japan is considerably less repentant than Germany about its aggressions and atrocities of half a century ago and very likely more driven by the desire for vindication and even perhaps for revenge."

Schlesinger is partly right. Japanese schoolbooks still gloss over Japan's role in the war. But revenge? Where is the evidence? Coming from a distinguished historian, such noodling is poisonous. Readers take him seriously.

Thinking about the Japanese *can* be frustrating. Big powers have great purposes. The U.S. has one: to spread democracy and free markets. The Soviet Union used to have a meddlesome mission, to turn the world Marxist. Now it has a healthy one: to become more like the U.S. and slip into the jet stream of the global economy. Surely Japan has some grand design too.

WESTERNERS LOOK for the secret in Japan's government-business relationship. Government planners try to figure out which industries will grow fastest. Then they stimulate investment with tax or fiscal incentives. But business listens only when it's convenient. Mitsubishi bought 51% of Rockefeller Group despite a Ministry of Finance warning not to irritate Americans by acquiring showy landmarks. Automakers refuse to reduce overcapacity. For all the talk of a centrally dictated economy, Japan has nine car companies, all slashing away at one another, while free-market, entrepreneurial America has but three, one of which was kept alive by government aid.

So what are they really up to? Probably not as much as most Americans suspect. Japanese companies are bent on expanding market share and will crush their brethren as quickly as foreigners if they can. At bottom, the government pursues those same banal objectives others do: steady growth, high employment, low inflation. Japan won't tell us what its goal is? Okay, we get it! It must be world domination! Hard as it is for Americans to believe, Japan still has trouble thinking of itself as a global power that ought to have a grander mission.

Even with nonstop jet service to Tokyo and an ever-increasing number of Japanese expatriates and tourists, the country still seems so *distant* to Americans. In the Eurocentric American mind, Canadians, British, and French may be foreigners, but

they are distinguished as individuals. Campeau goes bust, not the Canadians. Maxwell strikes again, not the Brits. But the Japanese have strange names—Mazda, Matsushita, Mitsui, Mitsubishi—and people generalize: "The Japanese bought the factory." That reinforces the illusion that they work in concert to a single end.

With skimpy knowledge of Japan, journalists find it hard to evaluate trade negotiations. Japan refuses to open its rice market. True, and an ill-conceived policy for sure. Americans should remember, however, that the Japanese are protecting their politically powerful farmers, and the U.S. has been known to do the same. Another perspective that rarely gets into the story is that despite the protection, Japan is the largest agricultural customer of the U.S. by far, buying more than all of Western Europe.

A filmmaker who does not want to be identified has written a Japanese character into a script he is doing for Columbia Pictures. He assumes that because Sony now

HOW IT LOOKS TO AN AMERICAN IN TOKYO

The man on the spot in U.S.-Japan trade relations is American Ambassador Michael Armacost. Since arriving in Tokyo last spring, Armacost has been franker than his predecessor, Mike Mansfield, who sometimes seemed an apologist for the Japanese. Armacost, 52, has held high positions in the State and Defense departments and was ambassador to the Philippines in the early 1980s. He recently talked with FORTUNE *international editor Donald Holt and associate editor Carla Rapoport in Tokyo.*

Where do we stand on persuading the Japanese to open their markets more fully?

Despite the resolution of several specific issues, most notably involving telecommunications, our trade imbalance was not reduced much over the past year, and that's a disappointment. The numbers are roughly where they were a year ago. With all due respect for my friends here, over the years the Japanese have taken as much time as possible to yield as little as possible. That forfeits good will. They need to take greater initiative to get rid of the remaining barriers, such as streamlining a complex distribution system, loosening up exclusive business relationships, and introducing greater transparency and fairness into procedural practices. It's important that they display a sense of urgency, that they move beyond discussion to action.

Are you worried by the rising anti-Japanese feeling among many Americans?

It's always dangerous when the hyperbole gets so shrill. After all, Japan is an *allied* country, it's a *friend*. Also, Japan represents such economic strength in the world that it's impossible to solve any problems in the economic sphere without its cooperation, not to mention the importance of our mutual security relationship, on which everybody in East Asia depends.

Still, it's very sobering to watch this economy because they are paying a lot of attention to fundamentals. The Japanese are very purposeful, and they are laying foundations for an extremely competitive economy in the 21st century. It's smart for us to do better. Japan is saving about three times as much as we are and investing about twice as much as a percentage of GNP on plant and equipment. Moreover, their investment is aimed at raising productivity rapidly and turning technological advances into commercial products. Japan is clearly training its young people well to meet the requirements of jobs in the information age. These are basic things. These are not things we can criticize them for. They are the qualities we admire in ourselves, historically. We need to get back to them, very fast.

CAROLINE PARSONS

Armacost: Danger in so much hyperbole

If we are successful at opening markets in Japan but haven't done these things that assure our competitiveness, then it will be to no avail. Each day we delay in getting a grip on things like our savings rate, our educational system, and our budget deficit, it will be harder and harder to catch up. Fortunately, we are a resilient people. As someone said, there is a special providence that looks after drunks, fools, and Americans. With work, strength, and resilience, these are all manageable problems.

When Japanese buy landmark buildings and make other investments, many Americans get nervous. Should they?

If you run up deficits, you have to finance them. I think direct foreign investment, particularly in manufacturing facilities, is a beneficial way to do it because it brings jobs, technology, and management skills.

Now that the cold war is over, some say that the U.S. needs a new enemy and Japan fits the bill. How do you respond to that?

It would be stupid to forfeit our relationship by treating Japan as anything other than what it is—a friendly nation. But there is another side to that issue. Americans are competitive people, and it's good to have a competitor. I went to graduate school right after Sputnik. The shock of seeing the Russians put a satellite in space gave a strong boost to America's scientific and technological development. The challenge today is to look at Japanese competition in its proper context. Maybe we could think of ourselves and Japan as the Celtics and the Lakers. Of course, the playing field has to be equalized. When it is, the spur of competition makes you more productive. Competition doesn't have to be destructive.

owns the studio, Chairman Akio Morita would demand it. If a Catholic had taken over the company, would he have written in a priest? "No, but the Japanese are different," he insists. Says who?

If a French group had bought into Rockefeller Center, Americans would not have anticipated a beaux arts face-lift. But who knows what the Japanese might do? What do they care about Christmas trees and the Rockettes? Americans, in fact, know next to nothing about Japanese tastes or the broad acceptance in Japan of American aesthetics. Year after year Hollywood's exports are Tokyo's box office bonanzas. Don't expect big changes in Rockefeller Center.

CATHERINE LAMBERT (2)

Bentley leads the Japan bashers on Capitol Hill.

DO CAUCASIANS despise Asians as an inferior race? Shintaro Ishihara, a member of the Japanese Diet adept at calling attention to himself, advances that idea in *The Japan That Can Say No,* a mean-spirited book that has circulated in bootlegged translations on Capitol Hill and has played a role in the swelling antipathy toward Japan. "American racial prejudice," he writes, "is based on the cultural belief that the modern era is the creation of the white race."

He's got that wrong. Western fear of Japan is more likely to be accompanied by awe of its achievements, its discipline, and the quality of its craftsmanship. Looking at IQ scores, some Americans conclude that, as a people, the Japanese are simply smarter; they average slightly higher than Americans do and score much better on standardized math tests. This also can be carried too far, making Japan mightier than it is. There are holes in Japan's infrastructure at least as serious as those in the U.S. Sewers are in particularly short supply.

In some Americans, the anger toward Japan resembles the anguish of a defeated people—or so they think of themselves. Yankee ingenuity invented modern production, establishing U.S. methods as supreme. Success validates American values as well: a blend of Protestant work ethic and free-wheeling frontier social structure. Yet the Japanese, with those peculiar, cumbersome customs (let's see, how deeply do you bow to the CEO?), are outperforming us. Americans could once console themselves that they were inventive, the Japanese imitative. Now it turns out that in consumer electronics and the new wave of autos, the Japanese show they know how to create.

THIS YEAR the tension may well increase. Japanese investment in the U.S. will probably spurt. Japan's defenders like to point out that the British have been the biggest investors in the U.S. But if recent trends continue, the Japanese, who bought $13.7 billion of properties in 1989, will move into first place in 1990.

Grumbling in Washington will grow. The Bush Administration will report to Congress in April on the progress of its so-called Super 301 complaints against the Japanese. Named for a clause in the 1988 trade act, the measure requires the President to single out countries deemed to have unfair trade barriers and retaliate if they don't remove them through negotiation.

Although 17 Japanese companies, including Sumitomo Chemical and Toyota, have bought Cray supercomputers, the government has bought only one. The U.S. also maintains that Japan should buy more American satellites (it has purchased five so far) and drop various picky specifications, such as the number of knots allowed in imported lumber.

Congress will demand as well that the White House show headway in the ponderously named Structural Impediments Initiative. Basically, legislators want Japan to scrap all business practices that make commerce difficult for foreigners. That includes breaking down the system by which Japanese companies buy only from local suppliers. The Japanese get their backs up over commands like that and counter that it is the U.S. that should change its ways: Invest in manpower training, save more, look beyond the next quarter, learn the metric system. The argument could get nasty.

This ever-building Japan bashing is dangerous. The relationship between the U.S. and Japan is intricate. Overheated rhetoric could cause a blowout in one part of the system that would lead to a chain of ruptures elsewhere.

Start with the military alliance. Americans complain that Japan freeloads, spending only 1% of GNP on defense while the U.S. spends 6%. Still, even that tiny fraction of Japan's booming economy amounts to $30 billion these days, which approaches what the U.S. spends west of Hawaii.

But it's Japan's part of the world. Shouldn't the Japanese spend more? If the U.S. wants to remain a global power, it has to steam through the appropriate straits to discourage the North Koreans and other bellicose locals from threatening sea lanes or neighboring countries. Even if the Soviets relax, the U.S. will want to keep a force in the North Pacific until the Russians mothball the submarines that are capable of launching a nuclear attack on the West Coast.

Close cooperation with Japan is the best way to carry out the assignment. U.S. carriers and attack planes mesh well with Japanese destroyers and submarine spotters. Where would the U.S. repair and resupply the fleet if the Yokosuka base were closed? If the U.S. and Japanese navies were to pull apart, the Japanese might be tempted to build carriers of their own. That would rattle the neighbors and could force the U.S. into an expensive military competition. Fifty-fifty cost sharing sounds about right.

Prestowitz worries about imported philosophy.

The word trade is so often coupled with "deficit" or "problem" that its enormous boon is easily forgotten. Stop the flow, and some major American companies would quickly feel the pain. Weyer-

haeuser exports $1 billion of paper and wood products to Japan every year; Dow, $600 million of chemicals and related products. The largest fleet of Boeing 747s belongs to Japan Air Lines. And many U.S. companies depend on the Japanese for components.

While American consumers have benefited from better cars and video cameras, competition has forced U.S. industry to sharpen up. Return to Congresswoman Bentley's district for a moment. It's the home of Bethlehem Steel's sprawling Sparrows Point complex. Imports, including Japanese, nearly put the plant out of business in the mid-1980s. But Sparrows Point has come back, with an attitude that's much improved. "Like all American steel companies, we used to tell the customers what they could have and when," says spokesman Ted Baldwin. "Now they tell us."

WHAT ABOUT Japanese investment? Economists Edward Graham of Duke and Paul Krugman of MIT, after a detailed study of foreign purchases, found no reason for apprehension. The U.S. is simply becoming more like Europe, where a larger share of business is owned by outsiders. Fed Chairman Alan Greenspan approves too. "If a Japanese buys a building in the U.S., we see it as a source of concern," he notes. "If he takes it apart brick by brick and carries it back to Japan, we call that trade."

Where do the U.S. and Japan go from here? The revisionist policies won't cut it. Japan is not as exotic as they make it seem. Some of these practices Americans complain of turn out to be a lot like what went on in the U.S. less than a generation ago. Look at how AT&T operated until 1984. The telephone monopoly controlled 84% of long distance and 90% of local calls, and bought equipment only from its manufacturing arm, Western Electric. Until the 1960s, American auto companies used only domestic steel.

Consumers made great sacrifices. Regulated prices and schedules required airline passengers from New York to Los Angeles to subsidize those flying from Cincinnati to Salt Lake City. Federal law funneled cheap money to the construction industry by forcing holders of savings accounts to accept interest rates below the market.

Obscured by the war of words is the fact that Japan *is* changing. The U.S. railed at its habit of importing mostly raw materials. Now manufactured goods have risen from just 22% of all imports in 1980 to 50% in 1988. To nudge the trend along, the government has begun giving tax breaks to manufacturers that use imported components.

By reputation, Japan thrives because it pumps out exports and sells them at predatory prices that decimate local producers in the rest of the world. But from 1980 to 1988 the share of Japan's GNP represented by exports dropped from 12.2% to 9.3% (compared with 6.6% for the U.S. and 26.8% for West Germany).

CHARLIE ARCHAMBAULT

Teikyo University merged with this failing college in West Virginia.

The first step in learning to think straight about Japan is to recognize that, at least for the moment, the trade deficit is headed in the right direction—down. The U.S. still came up $50 billion short last year. But Japan's imports from the U.S. rose 17% and exports to the U.S. only 4%. Exchange rate adjustments and the lowering of barriers seem to be working, however slowly.

American negotiators should continue to insist that Japan open its market to inexpensive foreign rice, which would leave consumers more money for other goods, Japanese and imported. But the dial on the pressure gauge should be kept steady, recognizing that almost all countries protect their farmers as long as they can.

The U.S. is right to insist that American contractors be given a fair shake in the competition to build bridges and airports; foreigners sometimes learn of the job only after bids are closed. Negotiations in the private sector, such as those carried out by the U.S.-Japan Business Council, should be pressed. Dozens of micro-agreements on such matters as common standards for testing pharmaceuticals ultimately result in the opening of difficult markets.

For Washington to demand much more begins to intrude deeply into Japan's domestic affairs in a way its people are likely to find offensive—just as Americans would. For example, the Bush Administration wants Tokyo to prosecute violators of antimonopoly laws more vigorously. If Tokyo agrees, does it get to insist that the U.S. crack down, say, on the use of drugs in the workplace on the ground that narcotics reduce productivity and competitiveness?

Back home, the U.S. has to make adjustments. The fundamental cause of Mitsubishi's and other Japanese companies' winding up with a trade surplus and dollars to invest is that Americans are inclined to consume today, Japanese tomorrow.

No need to get into the metaphysics of which is more virtuous, of whether we should save to give our children a higher standard of living than we have experienced. (You can argue it's holier to spend now on a Caribbean cruise with your aging parents.) But as a practical matter, the money the Japanese don't spend today will wind up in the savings pool, making capital cheaper for Japanese companies. That usually makes a manufacturer more competitive. The U.S. savings rate does seem to be ticking up as the baby-boomers start to contemplate the coming failures of the flesh. That should help America compete. Thinking of Japan as a trade rival is not damaging. What's corrosive is thinking of it as an enemy—and of the contest as economic warfare. F

CAN AMERICAN CARS COME BACK?

Not quickly or easily. Detroit's problems go well beyond slow sales. The Big Three must make huge changes—and get some lucky breaks—to stay competitive.

■ *by Alex Taylor III*

AS A SWISS-BORN ex-Marine, Chrysler Motors President Robert Lutz doesn't have much tolerance for euphemism. Even so, a little-noted speech he made to Chrysler suppliers was remarkable for its bluntness. "Folks, it's time to do or die," said Lutz. "I'm turn-down-the-heat and shut-off-the-lights serious."

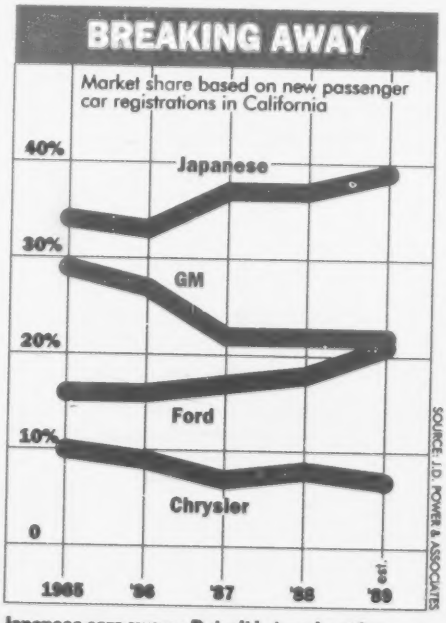
For Lutz and most other auto executives, the 1990 model year has gotten off to a bad start. Higher interest rates and an oversold market have pushed car sales into a 25% decline in the first three months, after several strong years. General Motors, Ford, and Chrysler all lost money on passenger car operations in the fourth quarter of 1989 and are expected to do so again the first three months of this year.

Far more worrisome: This trend may accelerate a long-term decline that could destabilize the U.S. auto industry. Despite the Big Three's efforts to build better, cheaper cars, the Japanese remain the world's high-quality low-cost automotive producer—at home and in the U.S.—with no sign that the gap is closing. Indeed, cars made by Toyota, Nissan, Honda, and company are so popular that by the end of this year they may account for nearly one of every three sold in America.

Looks like the Broncos vs. the 49ers again, and there is no home-field advantage. Waiting on the sidelines are two new coaches: Red Poling succeeds Donald Petersen as CEO of Ford on March 1, and Roger Smith's replacement—yet to be named—moves in at GM on August 1. The new guys must devise a game plan to win back customers and quarterly car profits. Changing strategies will be painful and will require some triage. Detroit must focus its resources on product lines, mostly big cars and trucks, where it has an edge, and let others drift. It must also get smarter about market research, advertising, and customer relations. Otherwise, the sales slide could become a rout. Important brands—Oldsmobile and Chrysler—are close to a tipping point. If sales of these cars fall much further, their customer bases will be so shrunken that dealerships will start to fail, making an upturn more difficult.

California has already tilted, and not because of an earthquake. In a state where about 12% of all new cars are sold—and one that is often a harbinger of the latest trends—Japan dominates with nearly 40% of the business (see chart). Detroit accounts for more than two-thirds of car sales across the U.S., but has just 50% of the California market. Hondas and Toyotas outsell Fords and every division of GM except Chevrolet; Nissan outsells all Chrysler brands combined.

As California goes, so could Kansas, Nebraska, and South Dakota. Having saturated the East and West coasts with dealers, Japanese automakers are pushing into the Midwest. J.D. Power & Associates, the automotive market research firm, figures they will open 1,800 Midwestern outlets over the next five years.

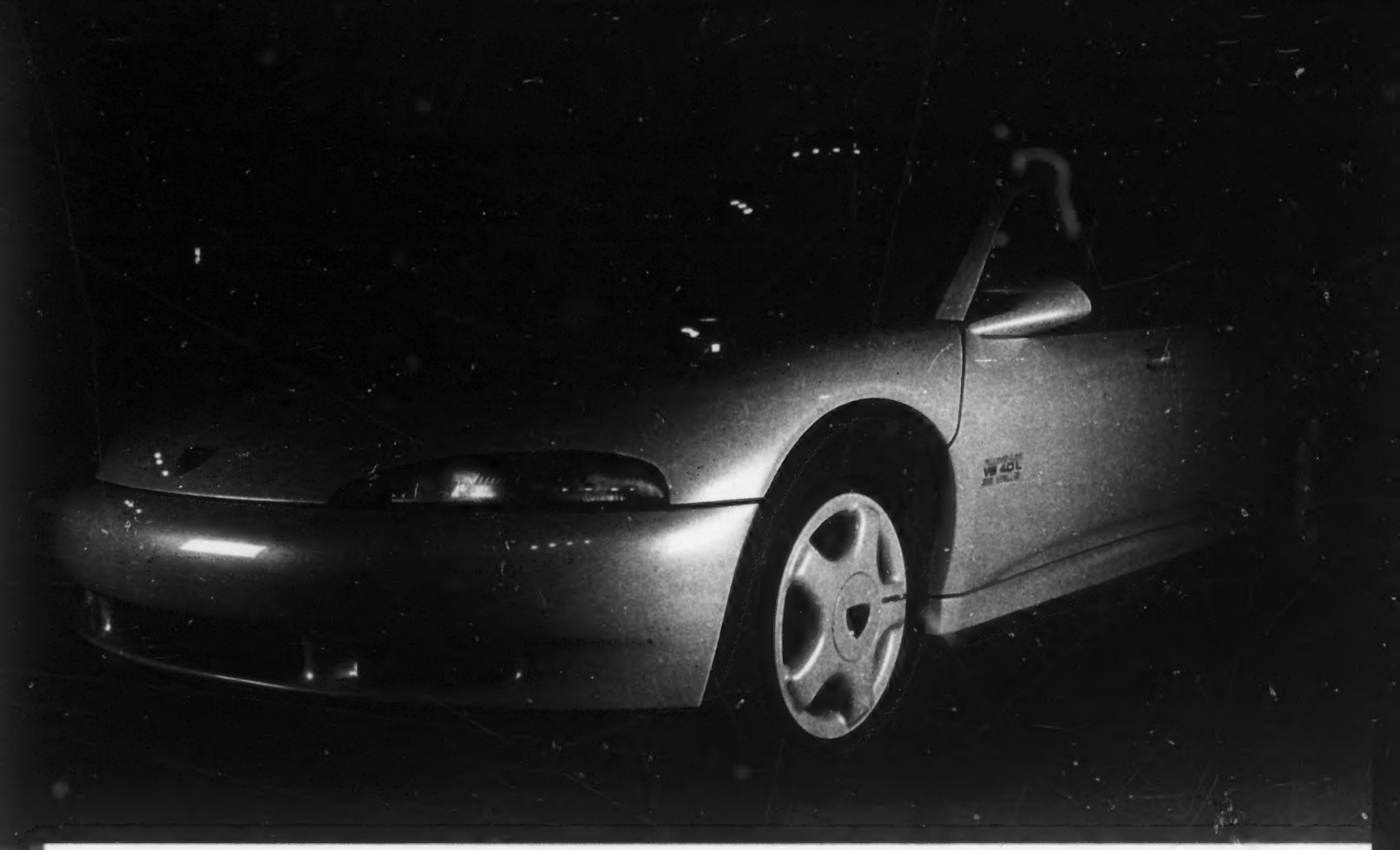


Japanese cars swamp Detroit in trend-setting California, where 12% of new autos are sold.

JAPANESE COMPETITION is so stiff that Detroit now sells nearly half of its cars—subcompact and compact models—at a loss. Ford built the new Escort from Japanese blueprints and still expects to lose money on every one of the 500,000 subcompacts it sells this year. Compacts costing up to $14,000, such as the Ford Tempo and the Chevrolet Cavalier, are no better than breakeven propositions, as top executives have begun to concede. Says Alex Trotman, 56, the fast-rising head of Ford's North American auto operations: "Whether we are in the red on compacts varies from year to year depending on the level of sales." Why, then, does Detroit continue to make small cars? Because it counts on them to lure entry-level buyers, to provide dealers with a full product line, and to keep the federally mandated corporate fuel economy averages (CAFEs) high enough to compensate for fuel-thirsty luxobarges.

Over the next few years the Big Three's cost structure could get much worse. The Bush Administration is poised to raise standards for fuel economy, exhaust emissions, and safety that will cost more than $6.5 billion. In addition, contracts with the battered and embittered United Auto Workers union expire in September. Since Detroit needs the autoworkers' cooperation to spur quality and productivity improvements, the union has a wedge to win expensive job security provisions.

The Japanese pay less for capital, labor, and benefits, and their factories—including those in America—are the world's most productive. Several Japanese plants in the



Chrysler's fate may ride on this midsize sedan, the first to enlarge the seating area without sacrificing aerodynamics. Code-named the LH, it's due in 1992.

U.S. employ non-union workers and thus enjoy a $10 per hour edge over Big Three facilities. These cost advantages allow them to price cars aggressively to win market share. For example, the $31,000 Mitsubishi 3000GT VR-4, made in Japan and marketed by Dodge as the Stealth (see Innovation), is loaded with such features as all-wheel drive and four-wheel steering. But it will sell for $6,000 less than its prime U.S. competitor, the $37,285 Corvette.

If Detroit cannot beat Japan on cost, how about quality? Gossip about Japanese quality problems circulates faster in Detroit than talk of celebrity sexual peccadilloes; word got around quickly when several of the Toyota Lexuses bought by GM developed cracked windshields. Still, Japan's cars remain the best engineered and assembled in the world. Says consultant Leonard Sherman, a Booz-Allen & Hamilton vice president: "American auto manufacturers are way behind the worldclass standards of the Japanese in human productivity, asset utilization, and speed, as well as quality."

The latest reminder of that unpleasant fact comes in a study by Easton Consultants, which analyzes the auto industry from offices in Boston and Stamford, Connecticut. After examining 100,000 repairs in recent cars and trucks, it found that U.S. makes required the replacement of 42% more critical parts—water pumps, transmissions, alternators—than imports.

Need more evidence of Detroit's lack of competitiveness? Then consider that it still takes the Big Three about five years—vs. three for Japan—to develop, design, engineer, and manufacture new models. Compressing that time would enable American carmakers to respond more quickly to market changes.

Each of the Big Three has unique abilities and vulnerabilities. GM is waist deep in money and talent but still elephantine in reaction time. Chrysler can maneuver faster than a Formula One racer but has shallow pockets; it hopes to hang on by Lee Iacocca's fingernails until its 1992 launch of a new line of radically styled "cab-forward" midsize cars, like the one pictured above. Ford is more competitive. Tom Wagner, head of Ford-brand cars and trucks, says his company is so strong that it should no longer be thought of as part of the Big Three. But Ford's future may be behind it because development of important new models, such as the Tempo and Taurus, has slowed.

Can U.S. cars come back? Despite the differences among Detroit's automakers, all three can take a few common steps to regain momentum. Herewith, five suggestions:

■ **Protect and polish the crown jewels.** With 33 domestic and foreign manufacturers selling 600 models, America has the world's most competitive car market. Since Japan appears to have an insurmountable lead in small cars, Detroit should concentrate on midsize and large ones, where it has always had an advantage and where it can make the most money.

GM seems to agree. It is merging three lines of small cars into one. By 1994 the J body, such as the Chevy Cavalier, and the N body, of which the Pontiac Grand Am is the best-seller, will both be built on the L body chassis GM uses for the newer Chevrolet Corsica. GM is willing to give up some marginal customers to save about $1.5 billion in production costs.

Chrysler aims to win customers by adding incremental value to existing models. By outfitting a $17,000 minivan with leather upholstery and plastic wood, it created the $25,000 Chrysler Town and Country. It gave

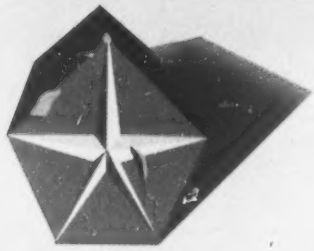
REPORTER ASSOCIATE *David J. Morrow*

PHOTOGRAPH BY DAVID WALBERG

AS THE PLANTS GO, SO GO THE JOBS

16 PLANTS: 36,345 JOBS

DATE, PLANT, LOCATION, JOBS LOST
5/87 Truck & Bus, Flint, Mich.: 3,400
6/87 Central Foundry, Pontiac, Mich.: 1,200
8/87 Assembly, Norwood, Ohio: 4,000
8/87 Truck & Bus, St. Louis: 2,570
12/87 Clark Street, Detroit: 3,300
12/87 Pontiac Assembly, Pontiac, Mich.: 2,000
12/87 Hydra-matic, Constantine, Mich.: 130
12/87 Fleetwood-Clark, Detroit: 3,300
12/87 Fisher Body, Flint, Mich.: 3,000
12/87 Inland Facility, Tecumseh, Mich.: 1,075
8/88 Metal Stamping, Hamilton, Ohio: 2,500
9/88 Conner Steet Stamping, Detroit: 700
10/88 Fisher Guide, Elyria, Ohio: 2,080
12/88 Central RTS Coach, Pontiac, Mich.: 2,200[1]
6/89 Metal Stamping, Willow Springs, Ill.: 2,990
6/89 Fisher Guide, Detroit: 1,990



13 PLANTS: 14,992 JOBS

DATE, PLANT, LOCATION, JOBS LOST
3/88 Indianapolis Electrical, Indianapolis: 975
3/88 Milwaukee Stamping, Milwaukee: 500
9/88 Winfield Foundry, Detroit: 45
11/88 Amplex, Van Wert, Ohio: 330
12/88 Kenosha Assembly & Stamping plants, Kenosha, Wis.: 5,500[2]
1/89 Detroit Forge, Detroit: 470
2/89 Coleman Products, Nogales, Ariz.: 250
3/89 Detroit Trim, Detroit: 950
6/89 Trenton Chemical, Trenton, Mich.: 172
2/90 Jefferson Assembly, Detroit: 1,700
6/90 Coleman Products, Coleman, Wis.: 400
9/90 St. Louis No. 1, St. Louis: 3,700

3 PLANTS: 1,125 JOBS

DATE, PLANT, LOCATION, JOBS LOST
7/88 Romeo Tractor, Romeo, Mich.: 538
12/88 Green Island, Green Island, N.Y.: 287
12/88 Canton Forge, Canton, Ohio: 300

U.S. automakers have closed 32 plants since 1987. Some workers retired or transferred to other sites. GM opened two new plants employing 7,300 people over the same period and expects to start Saturn production at a third factory this summer.

[1]Partial closing. [2]Two plants.

TONY MIKOLAJCZYK

birth to a $26,000 Imperial by stretching the wheelbase of the $15,000 Dodge Dynasty and dressing up its interior. Such tricks do not earn engineering awards, but they do sell cars.

The highest margins in Detroit come from light trucks and sport utility vehicles: two- and four-wheel-drive Jeeps and similar models. They cost less to make than cars and have little competition. The Japanese do not make full-size pickups (their streets are too narrow), and the U.S. imposes a 25% import tax on all two-door trucks: pickups, minivans, and utility vehicles.

In 1990 the Ford division may actually sell more trucks than cars, but like GM, it has been slow to upgrade them. One easy way would be to add safety features, such as automatic seat belts and high-mounted brake lamps, which are already required on passenger cars. Buyers today are safety conscious—a fact that underlies some popular advertising campaigns—and many drivers use trucks and cars interchangeably. The government may start requiring the safety equipment anyway, beginning in 1994.

■ **Get a real dialogue going with customers.** One of the great puzzles of the car industry is that Detroit produces reams of consumer research but still misreads the market. GM and Ford collectively spent $7 billion developing new midsize specialty coupes such as the Oldsmobile Cutlass Supreme and the Ford Thunderbird. They discovered too late that potential buyers were simply not there, in large part because baby-boomers prefer four-door sedans with room for their kids.

The Japanese make mistakes too. Their boxy "high cube" station wagons, so popular in Japan, flopped in the U.S. because of their unusual design. But the Japanese quickly changed lanes; Honda, for example, is about to introduce a conventional station wagon based on the popular Accord.

Customers prefer steak, but Detroit continues to market sizzle. Three years ago Chevrolet unleashed the jazzy "Heartbeat of America" campaign to revitalize its image. The commercials are still running, but buyers have deserted Chevy because its products are lackluster and dated. Since the campaign began, Chevy's market share has skidded from 15% to 13.6%.

When Detroit sticks to the facts, however, buyers pay attention. Sales of the Buick LeSabre rose 4% last year—vs. a decline of 6.6% for the division as a whole—after Buick began promoting the car's No. 2 position in J.D. Power's 1989 ranking of manufacturing quality. Unfortunately for Detroit, imports hold seven of the Power survey's top ten positions, including No. 1, which belongs to Nissan's Maxima.

■ **Make spending count.** When Ford wanted another luxury brand, it bought Britain's Jaguar for $2.5 billion. Competitors whisper that Ford may have to invest another $2.5 billion to modernize Jaguar's factories and product line. When Toyota wanted a luxury brand, it spent $700 million to develop the Lexus LS 400, added a second model at perhaps half the cost, and signed up 70 new dealers. Besides saving money, the Lexus program introduced design and production technologies that can be adapted throughout the company. The lesson: Toyota spent less and got more.

Like Ford, GM is learning that more may also be less. It has lavished an estimated $3 billion on the Saturn small car, which it plans to introduce this fall. But even if Saturn runs rings around its competitors, years will pass before it generates any profits for GM. And it goes up against the world champs of small cars—made by you know who.

■ **Strengthen the dealer system.** Detroit should stop selling cars on price and get dealers to focus on value and service. Dickering over a new car is about as pleasant as a trip to the dentist. Instead of offering cash rebates, which fuel a fire-sale atmosphere, Detroit should cut sticker prices. That would mean less room for bargaining and thus less pressure on buyers to try to get the lowest price. If the dickering is eliminat-

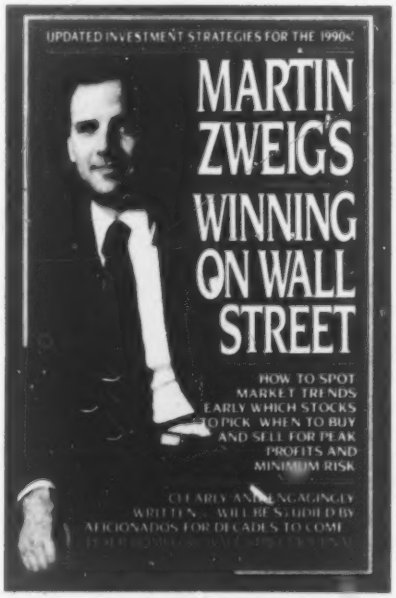
ed, dealers can spend more time emphasizing the features of their cars to customers. For instance, Detroit still leads in the production of V-6 engines, which provide better acceleration than the multivalve four-cylinder engines favored by the Japanese.

■ **Decentralize.** Maintaining the Motor City as the center of the auto universe creates practical and philosophical problems. Detroit's car men spend so much time talking to one another that they tend to reinforce ancient prejudices rather than learning anything new. Recruiting talented engineers to southeast Michigan is also getting tougher. Since cars are full of chips and computers, why not let electronics engineers live in California? Nearly every U.S. and Japanese automaker now maintains a design studio in California to funnel new ideas back to Detroit or Tokyo. For that matter, why not move Pontiac's headquarters to Los Angeles, where all the actors in its TV commercials seem to live? Or send the Chrysler-Plymouth division to Arizona or Florida, close to its retiree customers? Sales would improve, recruitment would be easier, and morale would zoom.

TRYING TO REVERSE a decade-long slide in market share is slow, slogging work. The odds do not favor Detroit. Says David Cole, son of a former GM president and director of the Office for the Study of Automotive Transportation at the University of Michigan: "The Big Three are going to be hard pressed to manage the accelerating change in the next few years." Analysts believe that as the Japanese keep adding more models, and their North American plants keep making more cars, they could add up to nine extra points of market share by the mid-1990s. That would represent 900,000 more cars a year—about as many as Chrysler sells now.

A little luck would go a long way for U.S. automakers. If the dollar weakens to 120 yen from its current 146, the Big Three would gain a price edge over imports. Steady or falling gasoline prices would boost big-car sales, thus giving a lift to what the Big Three do best. Detroit could even turn around on its own. A charismatic leader like Iacocca or a breakthrough design like the Taurus could lift an entire company in a matter of months. The auto industry, after all, reports sales every ten days. But the race is to the swift, and so far the Japanese have been lapping the competition. F

"WHEN ZWEIG TALKS, PEOPLE LISTEN."
—*Time*



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A DUAL MAIN SELECTION OF THE FORTUNE BOOK CLUB

A TRADE PAPERBACK

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NEW YORK: DOWN BUT HARDLY OUT

The city has been unpopular, unpleasant, and unlivable for, oh, at least 100 years now. But the ties that bind business to the place will not soon dissolve.

■ *by Andrew Kupfer*

Dear Milton,

Happy New Year, where you are at least, I hope. In New York City everything's going to pot again. The schools are falling down, the hospitals are falling down, Wall Street is falling down, the sewers are blowing up. My son wants to buy an apartment, but who can afford to now? He's living in a luxury converted welfare hotel.

Then there's the crack and the smack and AIDS and the people sleeping in the Citibank. They open the door and ask for a quarter, finally some courtesy. Other than that there's a new mayor—I'm not saying it's good or it's bad, it just is—and he says he's going to be tough on crime. Now six people have to be shot instead of three before it counts as a shooting spree.

So how's Pensacola?

Harry

THE BITTER forbearance with which New Yorkers view their hometown is beginning to wear thin again. Every decade or so a confluence of events, some local, others from beyond the city's borders, threatens New York City with decay and upheaval. The social and economic problems brewing in the city—crime, illiteracy, and homelessness; drug abuse and AIDS; the high costs of living and doing business; crumbling public facilities—will test it more severely than at any time since the mid-1970s, when fiscal mismanagement and the loss of 600,000 jobs pushed New York toward bankruptcy.

Back then, facing economic ruin, New York was both smart and lucky. Smart, because it put in place extraordinarily effective financial controls that balanced the budget and won back entree to the credit markets. Lucky, because just as the city reached bottom, Act II of the restructuring of its economy began, with service jobs taking up the slack of manufacturers that left; the financial industry, just 12% of the employment base in 1977, added one-third of the 300,000 new private-sector jobs gained since those bleak days.

New York appears to be running out of luck now. Social problems that did not even exist in the 1970s have invaded the city's consciousness and placed new burdens on spending. A series of abhorrent and violent incidents have inflamed both fear of crime and racial tensions, never far below the surface in New York. Companies needing to cut costs are eyeing other locales, as are individuals squeezed by high prices. And the financial industries that propelled New York through the 1980s seem to have lost their motive force. City tax revenues may not grow this year.

The combined effect of its maladies has raised an old question: Is New York in danger of losing its spot as the world's preemi-

REPORTER ASSOCIATE *John Labate*

The World Financial Center in Lower Manhattan is a glossy new addition to the seat of big money.

ADAM BARTOS

ILLUSTRATIONS BY J. D. KING

At City Hall new Mayor David Dinkins faces higher costs and lower revenues than the budget projected.

nent business center? The short answer, which will surprise the prophets of demise, is no.

Strong forces still compel businesses to stay in New York. Talented people still go there. Opportunities for growth still exist. The local government is not going bust. And, in the eyes of the dean of New York economists, the city has not lost its capacity for surprise. "I caution those who question New York City's capacity for comeback," says Samuel M. Ehrenhalt, for ten years the regional commissioner of the Federal Bureau of Labor Statistics. "People who have done so in the past have ended up with egg all over their faces."

That said, not even the most chauvinistic New Yorkers would deny their city is hurting. Of all the items on the wrong side of the ledger, crime grabs the biggest headlines. Per capita rates of murder and robbery have risen by less than 5% in the past decade, but several high-visibility crimes—the assault on a jogger in Central Park, murders of young blacks by white youths in Bensonhurst and Howard Beach, the Bernhard Goetz subway shootings—create the perception that New York has become dramatically more unsafe. Certainly the environment of the city has changed, as drugs, crime, and homelessness reach into even affluent neighborhoods. Says Rosemary Scanlon, chief economist of the Port Authority of New York and New Jersey: "Our public space has been taken over by the poorest of the poor in a way not seen since the Depression. I don't discount the effect it has on the way we feel about ourselves."

As bad as crime and racial tensions and homelessness are, people in the private sector and in city government argue that other aspects of urban life are more serious threats to the economy. Says Karen N. Gerard, a former deputy mayor for economic development and now vice president with relocation consultants Moran Stahl & Boyer: "People like to say quality of life is the reason they leave, because the city can't bargain over that. But the bottom line is cost and quality of labor." Financier Felix Rohatyn of Lazard Frères agrees: "Safety is clearly an issue, but it is not on top of the list. The cost of doing business, taxes, and schools are."

WHY ARE COSTS so high? Poverty is one cause, particularly since New York State, unlike most other states, asks cities to share welfare costs. In 1987 the bill to New York City—nearly one-quarter of whose residents live below the federal poverty level—was about $1 billion. Afflictions like AIDS and crack cocaine are sundering lives and costing additional billions. Last year AIDS alone cost over $700 million, with the city government's share about 25%. As a result, companies in New York face strange species of taxes found nowhere else on earth, such as the 6% levy assessed on their rent. And their employees pay some of the steepest state and city taxes in the nation.

To some extent New York is also a victim of the success of its high-paying businesses, whose employees have bid up the price of living space. As recently as 1982 the cost of housing in the region was about the same as the national median; now it is twice as high. Construction costs are around 15% more than they are just across the Hudson River in New Jersey.

The quality—and quantity—of labor is another critical issue for business. New York's public school system, once a model of excellence and still able to cultivate more Westinghouse science finalists than any oth-

New York City population	1988	7,352,700	**Population density** per sq. mile	Tokyo:	26,121	**N.Y.C. per capita income**	1987	$18,191	**Fortune 500 headquarters**	1988	48
	1980	7,071,639		N.Y.C.:	24,387		1979	$9,942		1980	81
	1970	7,895,563		London:	11,047		1969	$4,908		1970	118
Foreign born	1990	30%	**Private-sector jobs**	1989	3,009,500	**U.S. per capita income**	1987	$15,484	**City budget** fiscal year	1990	$26.6 billion
	1980	24%		1980	2,784,900		1979	$9,033		1980	$12.8 billion
	1970	18%		1970	3,182,300		1969	$3,808		1970	$6.6 billion

To relate the tables on this and the following pages to inflation, it helps to know that $1 in 1970 bought as much as $2.04 in 1980 and $3.16 in 1990.

SOURCES: NEW YORK CITY DEPARTMENT OF CITY PLANNING; U.S. DEPARTMENT OF LABOR; NEW YORK CITY DEPARTMENT OF RECORDS AND INFORMATION SERVICES; EMBASSY OF JAPAN; BRITISH EMBASSY; NEW YORK STATE DEPARTMENT OF LABOR; U.S. DEPARTMENT OF COMMERCE

er city's, is failing in its bread-and-butter job of turning out a literate, work-ready labor force. Belying the city's reputation for workaholism, the proportion of New Yorkers working or looking for work is well below the norm: roughly 55%, vs. 66% for the U.S. as a whole. Only 25% of local 16- to 19-year-olds are in the labor force—less than half the national average of 55%. "The school system has underperformed, not just in New York City but around the country," says American Express Chief Executive James D. Robinson III. "Education is the No. 1 priority on the business agenda."

The decrepit state of the schools' physical plant does not inspire much love of learning. Nearly all of the system's 983 schools need work. The backlog of repair requests has reached 33,000. "High schools used to be built on a monumental basis," says Richard

ARLENE GOTTFRIED

Grand Central Station: a home for the homeless

C. Wade, professor of urban history at the City University of New York Graduate Center. "They were airy and light, and when a kid came in he knew he was someplace. Now, if he lives in a slum, he may find his school a worse place to be than home." The city has just begun a $4.3 billion five-year capital improvement plan for the schools. Wade thinks it may need to spend twice that amount.

SOME DESPERATELY needed leadership has arrived in the person of new schools chancellor Joseph Fernandez, whom the city imported from Miami. He faces a stultifying central bureaucracy and corrupt local school boards that Felix Rohatyn says waste up to $500 million a year on worthless patronage jobs. Fernandez knows that quick and forceful action is essential. On his third day in office he suspended a principal for incompetence, unheard of in a city where principals have lifetime tenure in one building. He also asked 300 headquarters staff to resign. Rohatyn calls him the best thing to happen to the city in 20 years.

Fernandez will try to keep more children in school and off the streets. As it is, the number of high school students who drop out before graduating fell from 32.5% in 1984 to 26.8% three years later, in part because of special counseling programs in the 43 high schools with the worst attendance records. Says Robinson of American Express, which helps train high school students for work in the financial and travel industries: "The problems with the schools are not going to be solved overnight, but they can be dealt with very effectively and dramatically in the short range." One innovation that is catching on: training centers in high schools to help students learn what employers expect of them in the workplace. Sponsored by the Board of Education and the New York City Partnership, a group of local business and civic leaders, the centers began operating in six schools in 1988; they are now in 16, and a bill is before the City Council to expand the program to all of New York's 122 high schools by 1993.

What, in the meantime, is keeping jobs in New York? After all, the schools did not go bad yesterday. "If the city economy depended on the Board of Education, it would have failed 25 years ago," says Raymond D. Horton, president of the nonprofit Citizens Budget Commission and a professor of business at Columbia University. Some businesses simply have no place else to go. For example, financial companies that move their back offices from the city usually keep them within a 50-mile radius; the short leash allows face-to-face contact between the back-office director and headquarters. But the unemployment rate in the New York suburbs—including those in nearby Connecticut and New Jersey—is down to 3%, half the city's rate. Chase Manhattan recently decided to move to Brooklyn instead of New Jersey, in part because nearly 50% of its clerical staff is from that borough and might resist a long commute. Scanlon of the Port Authority says, "Back-office moves from the city to the suburbs are probably over."

Nor is a mass exodus of front-office service jobs likely, despite sophisticated telecommunications. "Stockbrokers feel uncomfortable anytime they're away from the Street," says George Sternlieb, professor of urban planning at Rutgers University. "A few adventurers may take advantage of faxes and modems. But the center of the pork chop is still New York City."

The city continues to lose manufacturing jobs; even in the two years after the crash, it lost more jobs in industry than on Wall Street—21,000 vs. 15,000. Since 1970 the number of FORTUNE 500 headquarters has fallen sharply, from 118 to 48. But ironically, industry left—and continues to leave—less because New York is in decline than because service companies find it such a good place to do business: Bankers, brokers, and lawyers have bid up the average price of midtown Manhattan office space to $40 per square foot vs., say, $20 in Pittsburgh. As John F. Powers, managing director of the real estate brokerage Edward S. Gordon Co., says, "Part of the incentive for the FORTUNE 500 companies to leave was the demand for their space." Counting the FORTUNE Service 500, 110 of the U.S.'s largest corporations have headquarters in New York.

The city doesn't have the monopoly on banking and dealmaking that it once did. But globalism, that 1980s buzzword, should play to New York's strengths in the 1990s. "Globalization

SOCIAL CONCERNS

AIDS cases cumulative	1989	23,906
	1984	3,462
	1979	0
Welfare cases	1989	366,783
	1979	339,978
	1969	273,020
Homeless	1989	70,000
	1979	10,000
Homeless in city shelters per night	1989	23,000
	1979	1,000
N.Y.C. poverty rate	1987	23.2%
	1979	19.3%
U.S. poverty rate	1988	13.1%
	1979	11.7%

EDUCATION

Public school enrollment grades K-12	1989	923,940
	1979	960,242
	1969	1,113,826
Private school enrollment grades K-12	1989	289,749
	1979	312,647
	1969	447,566
High school dropout rate	1987	26.8%
	1986	27.9%
	1984	32.5%

SOURCES: NEW YORK CITY DEPARTMENT OF HEALTH; HUMAN RESOURCES ADMINISTRATION; NATIONAL COALITION FOR THE HOMELESS; U.S. DEPARTMENT OF COMMERCE; NEW YORK STATE EDUCATION DEPARTMENT; COMMUNITY SERVICE SOCIETY OF NEW YORK

doesn't necessarily mean a shift of money to London and Tokyo," says Karen Gerard. "It means the world has a larger need for financial institutions. New York can afford to assume a smaller share of the pie if the pie is growing."

Most large foreign banks already have New York outposts, and they are poised for growth. They came, first, to follow customers from home. "In a global market, if you can't serve your multinational customers in all the major cities of the world, they won't need you even in their home country," says Clarence Hill, an economist at Deutsche Bank AG. The foreign banks are now looking for other ways to make money, such as real estate finance and personal banking, and they are hiring more people. Deutsche Bank, for example, added 100 people to its New York commercial banking operations, raising the total to 350. "Information creates power," says Hill, "and New York is the information center of the world."

AS AN INTERNATIONAL center, New York actually has some cost advantages. Office space in London is twice as expensive as in Manhattan, and in Tokyo four times as much. London has more foreign banks than New York—about 450 vs. 250—because regulations there permit commingling of commercial and investment banking. For the past two years the Federal Reserve Board has been chipping away at restrictions of the Glass-Steagall Act, which forbids universal banking in the U.S., and many in the business believe the act's demise is inevitable. Should this happen, Hill believes, New York's stature in international banking will grow at London's expense. Foreign banks could enter the mutual fund business, insurance, and other lines, encouraging more U.S. hiring. "Without a doubt we would hire in New York," says Hill. "This is where the know-how is."

New York has a flair for rebirth partly because it has always been a magnet for immigrants. The newest crop is extraordinarily diverse, mostly from the Caribbean, Latin America, and Asia, but with no country accounting for more than 15% of the total. Many of the immigrants are skilled, trained as doctors and nurses, engineers and programmers. Others have put new twists on old trades, such as the Korean greengrocers whose lush displays of fresh vegetables quickly attracted customers from supermarkets.

The immigrants create a virtuous circle, with high rates of employment giving them buying power, leading to resurgence of commercial areas, leading to jobs. And their arrival has boosted the city's population, which grew by at least 300,000 in the 1980s. In fact, the city grew faster than the suburbs for the first decade since the 1920s. "A larger population usually means a more buoyant economy," says Roger Waldinger, a City College sociology professor, "and the immigrants have entrepreneurial drive and energy."

New York relies on brainpower from other proving grounds. "What the Nile mud is to Egypt," says Sternlieb of Rutgers, "the graduation ceremonies at all the schools in the country are to New York." In recent years business schools at Harvard, Chicago, and other elite universities have sent fewer MBAs to New York: 20% of Chicago's class last year, down from 27% in 1986; 22% of Harvard's class, vs. 32% in 1986. The trend is disturbing, but placement officers blame the decline on a slower financial industry, not aversion to the city's mean streets. Says Jeanne Husain, placement director of the University of Chicago's business school: "Very few people who are interested in finance will refuse to go to New York City."

For the first time in nearly a decade, New Yorkers are concerned about the municipal budget; still, the tabloids proclaiming the city broke are overwrought. "There's been way too much loose talk about a budget crisis," says Raymond Horton of the Citizens Budget Commission. Because revenues are lower than expected and costs higher, the city will have to vault a $1 billion budget gap in the fiscal year starting this July. "In a $30 billion enterprise," Horton argues, "that's not a Herculean endeavor."

REAL ESTATE

Apartment buildings	1989	119,308
	1979	123,490
	1970	131,193
Park Ave. apartment avg. price, 2 bdrm.	1989	$740,000
	1980	$190,000
Office vacancy rate midtown	1989	11.4%
	1981	2.4%
Office rent midtown, per sq. ft.	1989	$39.62
	1979	$20.18
Assessed value of real estate	1990	$70.1 billion
	1979	$38.1 billion
	1969	$34.3 billion

Intact, for the time being, is the city's capital budget: $22 billion over the next four years to rebuild hospitals, schools, waterworks, bridges, housing. The city may have to cut spending if income falls too much, since tax revenues must pay the debt service. But New York will not suffer the calamitous neglect of the 1970s, when it lost access to credit markets and the capital budget fell to $50 million a year.

People like Horton worry less about a budget crisis than about the city's ability to spend efficiently and improve productivity. New York, for example, increased its police force by 4,200 from 1983 to 1987 but assigned fewer than 1,000 of the recruits to law enforcement; the rest went behind desks. Here are some spending suggestions from the Citizens Budget Commission and others:

■ **HOMELESSNESS.** Allocate more money for housing allowances, less for new city-owned shelters. Says New York University professor Emanuel Tobier: "Judging by the city's track record of managing buildings taken over for tax arrears, which is awful, I question how the new shelters will be run." After New York raised emergency housing payments to individuals and families in 1988, Tobier says, fewer people entered the shelter system, and private landlords in low-income neighborhoods got rent money that helped keep their buildings going.

CRIME

Homicides	1988	1,915
	1979	1,752
	1971	1,466
Robberies	1988	96,578
	1979	82,572
	1971	68,904
Burglaries	1988	128,626
	1979	178,780
	1971	181,331
Motor vehicle thefts	1988	119,650
	1979	85,852
	1971	85,735
Police officers	1988	27,483
	1979	23,675
	1971	31,370

■ **HEALTH CARE.** Build fewer hospitals and more facilities for what Charles Brecher, research director of the Citizens Budget Commission, calls alternative care. Brecher says city hospitals are overcrowded because 11% to 12% of their beds are occupied by people who don't

SOURCES: NEW YORK CITY DEPARTMENT OF BUILDINGS; CORCORAN GROUP; COLDWELL BANKER COMMERCIAL SERVICES; EDWARD S. GOF[illegible]N CO.; NEW YORK CITY DEPARTMENT OF FINANCE; NEW YORK CITY POLICE DEPARTMENT

ON THE TOWN

Dinner at Lutèce without wine	1989	$60
	1979	$35
	1969	$25
Metropolitan Opera ticket	1989	$66.00
	1979	$27.00
	1969	$16.50
Cab fare average ride, 2.9 mi.	1990	$5.88
	1979	$3.33
	1969	$1.52
Plaza Hotel double room	1989	$245
	1979	$75
	1969	$34

need to be there, such as abandoned infants and the elderly. He maintains that these people could be cared for more cheaply outside hospitals.

■ DRUG TREATMENT. The city uses prisons to house inmates who could be better—and more cheaply—rehabilitated in drug treatment centers. "Live-in 24-hour-a-day treatment centers are much less expensive than prisons," says Horton. "If someone's an addict or an alcoholic, and not a rapist or a murderer, he shouldn't be in jail."

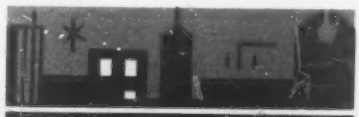
BUSINESS LEADERS have done very little to attack these problems. That's partly because, as Rohatyn puts it, "there is no such thing as *the* business community in New York. There are several business communities, and all have different interests. The chief executives do not all live here. And the city and state political structure has not always been hospitable to the notion of working with the business community." Even so, individuals could do more to help. The city's big wheels have often volunteered their time and money on projects in the public interest—a report on how to manage government more effectively, a new wing for a museum, a skating rink in Central Park. But, says Brecher of the Citizens Budget Commission, "not a lot of people are stepping forward to sponsor facilities for troubled youths."

New Yorkers could also do more to promote their city. Karen Gerard notes that even in cities as large as Atlanta and Denver, companies and local government have learned to cooperate. "Our clients want to go to a town to meet employers and learn about economic development programs in the region," she says. "Those cities can bring it together." New York has, at least, taken some first steps. Last year Mayor Edward Koch and deputy mayor for economic development Stanley E. Grayson took the city's first-ever dog-and-pony show to Chicago and Los Angeles, visiting banks and professional service firms that might be looking to expand eastward. Grayson says response was good, even though none of the targeted companies—which he declines to identify—has made a move yet.

To help lure prospects, David N. Dinkins, New York's first black mayor, should call on satisfied local business people. They do exist. Some, because of the specialized nature of their businesses, are even satisfied with the Board of Education. "The New York schools give us good semiskilled people," says Bernard L. Schwartz, chief executive of Loral, a $1.5-billion-a-year defense electronics company with plants around the country. His flagship factory in the South Bronx is the most profitable of all his plants. True, Loral is in a niche market and tends to hire graduates of New York's vocational high schools. But testimonials like Schwartz's are too good to pass up.

Since winning the election last fall—barely—Dinkins has struck a fiscally prudent pose. He quickly scaled back some of his most expensive campaign proposals, such as treatment on demand for drug addicts. Dinkins is hardly the first politician who promised more than he could deliver, but his actions helped calm the financial community, which worries that city labor unions have the mayor in their collective pocket. Castigated for being too gentlemanly to handle the brawling metropolis, Dinkins made a gutsy appointment, reaching beyond the pale—that is, to Houston—for a new police commissioner despite objections from many New York politicos, Ed Koch and Governor Mario Cuomo included.

The uneasy relationship between the city and the hinterlands has long been New York's bane and its salvation. In a 1939 issue devoted entirely to New York City, FORTUNE wrote: "The discovery of huge resources in the West, occurring at the very moment when economic and political pressures in Europe were driving emigrants to this country, created ideas for the exploitation of the continent; ideas in the heads of the great American entrepreneurs, the gamblers, the speculators, and the investment houses; ideas for vast schemes and enterprises to change the face of the earth. These ideas were not necessarily generated in New York. But they exploded in New York because New York had the immigrants and New York had the *credit*. In one spectacular, breathless human lifetime New York exploded from a marketplace for goods to a marketplace for ideas; basically capitalistic ideas, but also ideas of every kind and shape that a new, expanding, optimistic, liberty-loving, profit-hungry continent could use. The fact is that New York cannot be intelligently discussed as a city, because it is not just a city. It is the heart of the U.S. economy."



ILL WINDS

Garbage disposed in tons	1989	6,135,000
	1979	6,605,000
Water main breaks	1989	609
	1979	574
	1969	415
Suits filed against N.Y.C personal injury	1989	9,510
	1979	9,874
N.Y.C. payout personal injury	1989	$138 million
	1979	$29 million

RAILS AND ROADS

Subway ridership weekday average	1989	3,670,000
	1979	3,600,000
	1969	4,550,000
Subway fare	1990	$1.15
	1979	$0.50
	1969	$0.20
Graffiti-free subway cars	1989	100%
	1985	31%
	1979	0%
Potholes filled 1988	Chicago	320,222
	N.Y.C.	416,000
	Houston	225,000

It still is, 15 years after President Gerald Ford spurned New York's request for money, prompting the New York *Daily News* to run that memorable headline FORD TO CITY: DROP DEAD. "The bulk of learned opinion said New York was dead," recalls Sternlieb. "The only question was how to bury it." Outsiders often dismiss New York as too rich, too profligate, too different. But because some people—and companies—really like it, and others need to be there, the economic circumstances that bind enterprise to New York are not likely to change soon, despite the hardships that always seem about to upset the apple cart.

"Are you from the city?" asks Stanley Grayson, the former deputy mayor. "Aren't there days when you say, 'I can't take it anymore'? There are for me. But then I ask myself, Where else will I go?" F

SOURCES: LUTÈCE; METROPOLITAN OPERA; NEW YORK CITY TAXI & LIMOUSINE COMMISSION; NEW YORK CONVENTION & VISITORS BUREAU; NEW YORK CITY DEPARTMENT OF SANITATION; NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION; NEW YORK CITY LAW DEPARTMENT; METROPOLITAN TRANSPORTATION AUTHORITY; CHICAGO MAYOR'S OFFICE; NEW YORK CITY DEPARTMENT OF TRANSPORTATION; HOUSTON DEPARTMENT OF PUBLIC WORKS

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MARCH 12, 1990

FORTUNE

IS YOUR COMPANY ASKING TOO MUCH OF YOU?

Yes! say more and more managers—but chief executives don't agree

Tom Klein, 38, left a high-stress career at McKinsey to run his family's California food company.

PLUS
WHY NATIONS TRIUMPH
Excerpts from Michael Porter's new b...

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FORTUNE

"It used to be that 60-hour workweeks gave you warrior status, but the trend is reversing. People are saying that 60-hour weeks mean something is wrong." PAGE 38

ABOVE: Bonnie Stedt works 12-hour days in her office at American Express Travel Related Services in Manhattan. Photographed by Rob Kinmonth.

COVER: Tom Klein chucked high pressure for his family's business, including this vineyard where he was photographed by George Steinmetz.

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Corporate restructuring and heightened competition have left managers working harder than ever—sometimes way too hard. Warning: The troops are beginning to get restless. *by Brian O'Reilly*

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"Negotiating with one's self seldom produces a barroom brawl."

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"I'm in favor of due process. But that kind of slows things down."

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"Nothing has contributed to the drift in American industry more than ebbing rivalry."

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"If we can get our act together in Asia—well, to hell with Europe!"

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"What you do is digest the information and then give them [the customers] what you think they ought to have."

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"We only go into countries where free enterprise is given a crack."

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EDITOR'S DESK

MOST AMERICANS think the biggest problem facing the nation today is drugs. President Bush has just attended a drug-fighting summit in Colombia, stronghold of the cocaine cartels. But dramatic diplomacy is only a small part of the solution, writer Louis Kraar discovered in reporting "How to Win the War on Drugs" (page 70). Says Kraar: "Most of the prescription for victory lies much closer to home—in our neighborhoods, schools, and courts."

To find out what works and what doesn't, Lou Kraar and reporter Laurie Kretchmar interviewed politicians, law enforcement professionals, doctors, and social scientists across the U.S. "People usually associate drugs with crime," says Kraar, "but that overlooks the complex social, medical, and hundreds of other aspects of the problem." Kretchmar, who wrote the accompanying box on the Phoenix House treatment centers, got a close-up look at the ravages of drugs. She talked with drug abusers and to doctors developing medications to help cure addicts.

JOHN S. ABBOTT (2)

Kraar: finding a remedy for the drug problem

A member of FORTUNE's board of editors and a 30-year veteran newsman, Kraar also tackled the federal government's bureaucratic maze. "The problem in Washington is that no one agency is specifically in charge," he concludes. He interviewed officials at eight agencies, including the State Department and U.S. Customs. Most were eager to talk. "Our toughest problem was contradictory information," says Kraar. Cutting through those complexities, FORTUNE offers a workable prescription for dealing with illicit drugs.

Fierman: uncovering the mysteries of CEO pay

By contrast, associate editor Jaclyn Fierman often met chilly silence in reporting "The People Who Set the CEO's Pay" (page 58), about compensation committees of corporate boards. Many committee members and most CEOs refused to talk about what goes on behind the boardroom's closed doors when it's time to set pay for a company's highest executives. Perhaps with good reason: Some who did talk were unaware of provisions in compensation packages they had approved.

With the help of reporters Andrew Erdman and Jacob Park and FORTUNE intern Hsiao-hui Yang, Fierman interviewed dozens of committee members, aggrieved shareholders, and consultants who analyze pay packages, an eye-glazing exercise in translating doublespeak. Says she: "I talked to lawyers who admitted that proxy statements are intentionally unintelligible to keep shareholders and competitors in the dark."

As Fierman reports, compensation committee members live with powerful conflicts: "They may have gone to school with the CEO, or they live down the block from him. It's hard to maintain objectivity." I think you will agree that opening these committees to the light, as Fierman does, is good medicine for companies and their shareholders.

Marshall Loeb

MANAGING EDITOR

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BRIAN SMITH

Raider Irwin Jacobs in his ark: having fun looking at opportunities

gunwales in red ink. He paid 30 cents to 40 cents on the dollar for the bonds, which were issued in 1988 at par. Says Jacobs: "It's great fun to sit here and look at the opportunities. I'm glad I'm still potent." Financially, that is.

Carl Icahn has been buying the bonds of debt-laden **Leaseway Transportation**, a trucking company. Icahn also has been snatching up bonds issued in 1988 by **TWA**, the airline he owns and runs, paying between 48 cents and 53 cents on the dollar.

Mergers could follow both moves. They make strategic sense: Icahn also controls **ACF Industries**, a railcar-leasing company. Jacobs owns **Genmar Industries**, which manufactures boats.

The market in bonds rose after **Drexel Burnham Lambert Group**, the architect of junk financing, filed for Chapter 11 protection (see Money & Markets). Investors must now evaluate securities on their underlying creditworthiness and not on Drexel's ability to shuffle paper among clients. That opens up some of the action. **– Brett Duval Fromson**

TOY WARS IN JAPAN

■ "Unfair!" So goes the rallying cry of thousands of Japanese toy shop owners—mostly mom and pop entrepreneurs—who are angry at **Toys "R" Us**'s plans to open some 100 stores throughout their country. Many of these stores will be sharing parking lots—and, hence, drawing power—with **McDonald's** outlets. McDonald's is investing in the venture.

U.S. Trade Representative Carla Hills casts the toy company as a pioneer trying to break the stranglehold that small, inefficient retailers and wholesalers have over much of Japan's retailing. The owners of Japan's tiny toy stores argue that Toys "R" Us would put them out of business. They are pressuring local chambers of commerce to at least slow down the arrival of Toys "R" Us.

TOSHI DATO

Making a sale in a Tokyo suburb

But Toys "R" Us has some powerful supporters. Toy manufacturers think the U.S. company could help build the domestic market. Discount chains, whether or not they sell toys, would like to end small competitors' influence over where the chains can open. The Ministry of International Trade and Industry, which has been quietly reining in local chambers of commerce for the past year, also wants to open up the market. **– Susan Moffat**

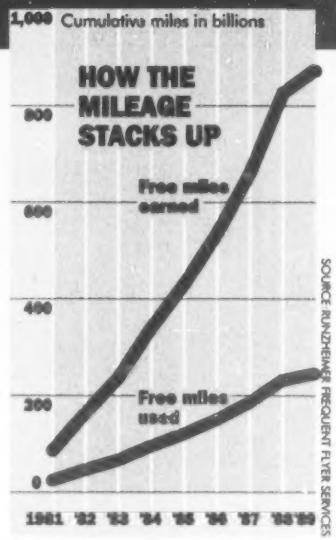
WHOSE FREQUENT-FLIER MILES?

■ Since the airlines launched frequent-flier programs a decade ago, passengers have earned enough free miles—875 billion—to go to the moon and back almost two million times. In fact, they've been accumulating the free miles much faster than they fly them (see chart).

Business travelers usually consider the awards no more than a just reward for the rigors of air travel. Even so, some corporations have long kept frequent-flier miles for themselves. Among them, **Boeing**, **Chrysler**, and **Chemed**, a Cincinnati chemical company. Ken Heldt, managing director of **Frequent Flyer Services**, a group that tracks these awards for corporations, estimates that travel costs are rising at 20% a year. That may spell the end of travel perks for traveling executives: More and more companies are looking at frequent-flier miles as a way to stretch their budgets.

Savings can be dramatic. Boeing gets back about $1 million a year on a $100 million travel budget. Says Chemed's travel manager, Margie Crace, who is also president of the National Business Travel Association, a professional group: "I don't believe most companies realize how much money is going down the drain." Even so, she has compassion for the business traveler whose company keeps frequent-flier miles: "It's like taking food from the mouths of children."

Well, not always, particularly if the child wants to cheat. Tracking the awards for thousands of employees, each of whom may be flying several different airlines, can turn out to be a statistical nightmare. Besides, the biggest hurdle for cost-cutting travel managers may be getting the support of the CEO. Assuming the absence of a corporate jet, the CEO is often the most frequent flier of them all. **– Mark Alpert**



Companies want those free trips

BASEBALL: BE PAID AS YOU PLAY

■ This year baseball fans should be singing, "Take me out to the lockout." The 26 major league team owners announced in January that they wouldn't open their spring training camps until they reached a new labor agreement with the players. The owners want to link player salaries to gate receipts and broadcast revenues, as the National Basketball Association did in 1985. Bud Selig, president of the Milwaukee Brewers, calls it a "fundamental change." It's much too fundamental for the players. Even baseball commission-

A giant's pay for Will Clark?

BILL SMITH—SPORTS ILLUSTRATED

THE HIGHEST-PAID BATTERS*

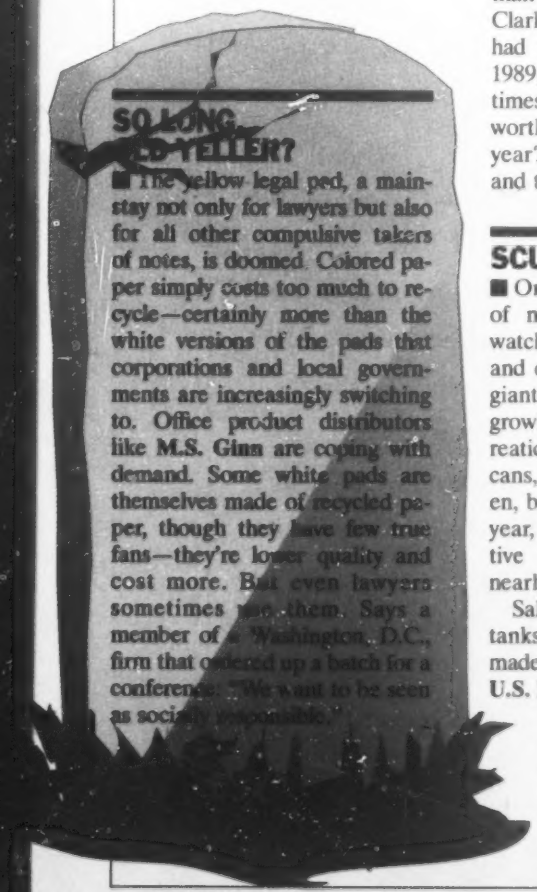
PLAYER	YEARLY PAY in millions	HITS '89 season	COST PER HIT
Will Clark San Francisco Giants	$3.75	196	$19,133
Eric Davis Cincinnati Reds	$3.1	130	$23,846
Joe Carter San Diego Padres	$3.07	158	$19,430
Ricky Henderson Oakland Athletics	$3.0	148	$20,270
Kirby Puckett Minnesota Twins	$3.0	215	$13,953
Kent Hrbek Minnesota Twins	$2.8	102	$27,451

*As of 2/15/90.

er Fay Vincent isn't sold. He has asked the owners to do what bureaucrats do: Study the idea some more. Vincent thought even less of a complicated plan to pay players according to how well they play during their first six years in the major leagues. He wants that idea dropped entirely.

The owners admit their clubs make money—revenues were over $1 billion last season—but they fear that player pay will spiral out of control. The eternal question: How much are dese bums really worth?

One way to measure a batter's value is to calculate the cost of each hit. (For how the six top-paid sluggers rate, see table.) But such statistics don't tell the full story. The Twins' Kirby Puckett seems to be delivering the most swat for the buck with 19 more hits last season than top-paid Will "the Thrill" Clark of the Giants. But Puckett had only nine home runs in 1989; the Thrill homered 23 times. Does that make Clark worth the extra $750,000 per year? You figure it out, fans—and then call the owners. **-M.A.**



SO LONG, YELLER?

■ The yellow legal ped, a mainstay not only for lawyers but also for all other compulsive takers of notes, is doomed. Colored paper simply costs too much to recycle—certainly more than the white versions of the pads that corporations and local governments are increasingly switching to. Office product distributors like **M.S. Ginn** are coping with demand. Some white pads are themselves made of recycled paper, though they have few true fans—they're lower quality and cost more. But even lawyers sometimes use them. Says a member of a Washington, D.C., firm that ordered up a batch for a conference: "We want to be seen as socially responsible."

SCUBA BOOM

■ Once the exclusive domain of macho-suicidal types who watched *Sea Hunt* on television and dreamed of wrestling with giant octopuses, scuba diving is growing fast as a national recreation. About 400,000 Americans, one-third of them women, became certified divers last year, bringing the total of active plungers in the U.S. to nearly three million.

Sales in the U.S. of fins, air tanks, and other scuba gear made by such manufacturers as **U.S. Divers**, **Dacor**, and **Scubapro** have been growing at 8% a year since 1985, reaching $500 million in 1989. Exports are rising at 20%. Diving in such exotic destinations as Belize, Bonaire, and the Cayman Islands is also booming. Closer to home, the waters of John Pennekamp Coral Reef in the Florida Keys have become a mecca for vacationing executives wearing wet suits. Says park manager George Jones: "The demographics of the visitors have changed dramatically in the past five years." **-M.A.**

FRINK: THE STOCK MARKET

New divers take classes in the Florida Keys.

THE SOUL OF IBM'S NEW MACHINE

■ What **IBM** *really* needs is a hot new machine. So runs the conventional wisdom on the company, which just came off a depressing year with earnings down 35%, market share shrinking, and 10,000 jobs now vanishing. The new line of Risc System/6000 workstations may be just what the doctor ordered.

The long-awaited computer, which will compete with popular workstations from **Sun Microsystems** and **Digital Equipment**, has had rave reviews from industry analysts for its price and performance. Costing $12,995 and up, Big Blue's machine can run software developed by **Next**, Steve Jobs's workstation company. Next's new hardware will compete with the IBM machine, but that doesn't seem to worry either outfit. Says Nick Donofrio, head of IBM's advanced workstations division: "Steve has told us that he'd rather have a piece of a bigger pie than all of a smaller pie."

Scientists and engineers used to be the principal users of workstations, but executives increasingly are turning to them because of their extra power. IBM's previous workstation offering, the RT, was judged too weak in number crunching. Customers preferred Sun's Sparcstation and DEC's Vaxstation. But IBM brags that its new entry handily outperforms all major competitors. Says Donofrio: "We learned a lot from our experience. It's made us hungrier." **-M.A.**

U.S. INVENTS, JAPAN PROFITS (AGAIN)

■ A paperless society? Don't believe it. Copy machines will be spewing out more paper than ever in the 1990s—and more of them will be doing so in color. **Dataquest**, a San Jose, California, market research firm, predicts revenues from color photocopiers, supplies, and service will rocket from $260 million in 1988 to $1.7 billion in 1993 (see chart). Reason: the widespread use of chromatic printers and plot-

BY ANDREW EVAN SERWER

BIOTECH STOCKS ARE POISED TO PAY OFF IN THE 1990s

■ Forget about price/earnings ratios. Forget about book value, hidden assets, or other traditional measures of value. Instead, think about potential, about sky's-the-limit growth. If that kind of investing doesn't make you queasy, you're ready to look at biotechnology stocks, a group that many Wall Streeters believe holds more promise for the 1990s than any other.

Biotechnology is still an infant industry. The entire market capitalization of biotech pharmaceutical companies amounts to only 5% of the drug industry's capitalization. But analysts say that the companies are about to release some blockbuster products that will generate explosive earnings growth and power a long run in the stocks. Rising sales and earnings won't be the only fuel. The proposed purchase of 60% of industry leader **Genentech** for $2.1 billion by Swiss pharmaceutical giant Roche Holding Ltd., parent of Hoffmann–La Roche, suggests takeovers may play a role as well.

Valuing biotechnology stocks is a bit trickier than sizing up companies with a long track record. Because so few show any earnings to speak of, analysts determine value by measuring a company's market capitalization against its potential product stream. That may sound like dreamy-eyed investing, but analysts insist that it's the only way to play. Says Teena Lerner, a biotech analyst at Shearson Lehman Hutton: "If you wait for earnings with these stocks, you will miss a major part of their move."

A company that has analysts particularly excited is **Chiron**, which recently identified a new type of hepatitis and should receive clearance from the Food and Drug Administration this year to market a test that would detect the disease. Like many other biotech firms, Chiron will team up with a major pharmaceutical house, in this case Johnson & Johnson, to sell the product. Analysts say the test could generate revenues of $200 million a year by early 1992 and help push the company into the black.

Amgen is already churning out profits, thanks to strong sales of erythropoietin, or EPO, a human hormone that stimulates the production of red blood cells and is used to treat anemia. Product sales have gone from $2.8 million in the fiscal year ended last March to an estimated $140 million this year. Amgen is also testing G-CSF, a drug that promotes the manufacture of white blood cells, which would greatly benefit chemotherapy patients.

Most analysts see Amgen earning around $1.25 per share in fiscal 1990 and up to $2 next year. Despite that rosy forecast, the stock has stalled out in recent months. Investors are concerned about a suit **Genetics Institute** filed against the company, alleging patent infringement. But analysts note that a settlement appears imminent, and a worst-case scenario is already discounted in Amgen's stock price.

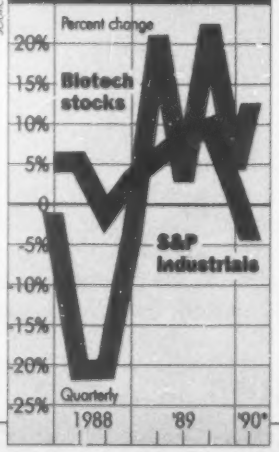
Although Genetics Institute is still reporting losses, many money managers believe it is one of the least risky biotech stocks. "GI has a diversified group of products, which protects it in case one doesn't work out," says Edward Owens, who runs $80 million for Wellington Management in Boston. One of the most promising products in its medicine chest is synthetic Factor VIII, a blood-clotting agent needed by hemophiliacs. The company also makes t-PA, a blood clot dissolving agent, and a product that promotes the production of white blood cells. None of these are on the market, though all should be approved within two years. Analysts think the company could show a profit in 1991.

Jon Hickman, a money manager with Wells Fargo & Co. in San Francisco, has high hopes for **XOMA**, which has a promising drug nearing FDA approval. Xomen-

JOHN HARDING

Biotechnology investors have been bounced around during the past two years. But major breakthroughs, like Chiron's new hepatitis test, could inject new life into the stocks.

BIOTECH'S BUMPY ROAD



*through February 15.

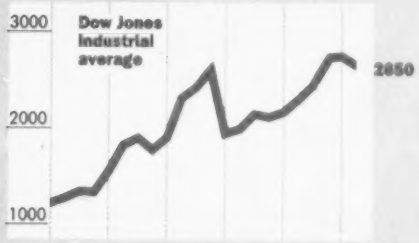
SOURCE: PAINE WEBBER

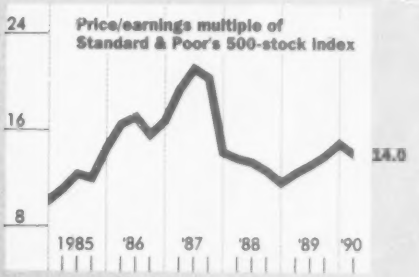
COMPANY Market capitalization in millions	REVENUES in millions	NET INCOME in millions	STOCK PRICE RANGE Recent price
Genentech $2,254.2	$400.5	$44.0	$16.75–$30.88 $26.75
Amgen $891.1	$155.7	$3.8	$35.75–$60.25 $52.00
Genetics Institute $480.5	$43.6	($28.7)	$18.50–$36.50 $34.00
Chiron $400.4	$35.1	($19.3)	$16.00–$34.50 $25.50
Biogen $348.3	$40.9	$3.2	$9.25–$19.00 $15.50
XOMA $270.0	$5.8	($13.3)	$13.00–$26.50 $20.25

*Latest four quarters.

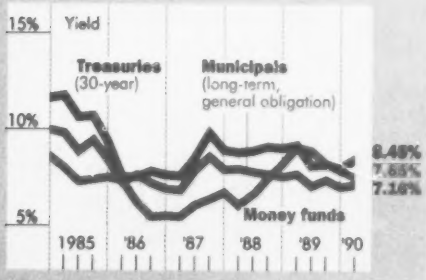
STATE OF THE MARKETS

Stocks

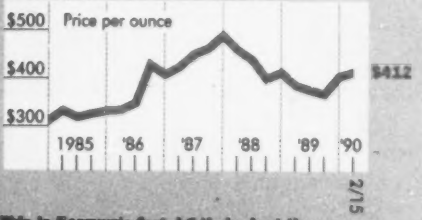




Bonds



Gold



2/15

This is Fortune's fortnightly look at the major markets of the past five years

CHARTS SHOW END-OF-QUARTER FIGURES.

BASED ON EARNINGS FOR THE LATEST FOUR QUARTERS.

SOURCES: STANDARD & POOR'S, BOND BUYER, DONOGHUE'S MONEY FUND REPORT, COMMODITY EXCHANGE

E5 treats sepsis, a potentially fatal bacterial infection that causes 80,000 deaths a year. This drug should get the green light in 1990 and could be a $300-million-a-year seller within a few years.

Biogen reported its first profit only last year. The company collects royalties from its partner Schering-Plough on sales of alpha interferon, used abroad for treating hepatitis. The treatment should soon receive approval for use in the U.S. Another partner, SmithKline Beecham, is about to market a new hepatitis vaccine that incorporates technology on which Biogen holds patents. In return, Biogen will receive royalties from the sales. Lerner of Shearson Lehman thinks Biogen earnings could grow from a penny a share in 1989 to more than a dollar a share by 1992.

The granddaddy of biotech, Genentech, has grown even more powerful since it announced its tie-up with Roche Holding. Says Denise Gilbert, biotechnology analyst at Montgomery Securities: "The Roche deal will provide Genentech with $600 million in cash, making it an even more formidable competitor." Though Genentech is more than twice as big as its nearest rival and has four products on the market, the stock has languished below $30 since mid-1988, after topping $60 in late 1986.

It may now be time to buy. The agreement between Roche Holding and Genentech gives the Swiss company a five-year option to pick up the remaining 40% of Genentech it doesn't own. Most analysts believe Roche will buy, which, given the agreed-upon price, would generate an annualized return of more than 20%. That's the perfect antidote to an anemic portfolio.

MUTUAL FUNDS THAT OFFER STOCKS AT A DISCOUNT

■ Whoever said there's no such thing as a free lunch never heard of discounted closed-end mutual funds. Unlike open-end funds, whose share prices always reflect the value of the underlying portfolio, closed-end funds can be priced far above or below the value of the fund's assets. When a discount develops, opportunity beckons. Says W. Douglas Dent, co-editor of *Frank Cappiello's Closed-End Fund Digest*: "It's a great deal. You pay $8 for $10 worth of stocks."

The discounted funds are especially appealing now because some of them may soon switch to open-end status or even liquidate. Either move would result in a capital gain, since the fund's shares would shoot up to par to reflect the new status.

Liberty All-Star Equity Fund, which at $7.75 a share trades at a 15.9% discount to net asset value, will switch to open-end status in the first half of 1993 if a simple majority of shareholders votes to do so, a strong probability if the discount persists. For investors who want to get in early while the discount is still fat, Liberty's well-diversified portfolio, which is heavily weighted with such big-cap stocks as Philip Morris and Exxon, makes an attractive place to park money. In 1989 the fund returned 28%, vs. the 24% average for all equity mutual funds.

Counsellors Tandem Securities Fund, a closed-end stock fund that invests mainly in utilities, may open even earlier. Its board of directors recently announced that it would poll shareholders April 10 to see how many want to switch to open-end status. If two-thirds do, the board will call a special meeting to take a binding vote on the question. Though the fund's board denies acting under pressure, analysts say the move comes at least partly in response to prodding from Sequoia Partners, an investment group holding a 22% stake in the fund. At $10.25 a share, Counsellors Tandem trades at a 13.8% discount to net asset value.

– Karen Nickel

GROWING OLD WITHOUT GROWING POOR

■ Do you have enough stashed away for your old age? Consider this: Within 20 years the average life expectancy of a 65-year-old is expected to grow to 81 for men and 86 for women. So if you think that you have stored up enough in pension and savings to last till the very end, you may have to think again.

Fortunately, insurance companies, which love to fiddle with actuarial tables, have been putting out products aplenty that can help you live a long life without pinching pennies or becoming a financial burden to your children. The policies aim to put extra cash in your pocket just when your income might be trailing off

STOP WHINING AND GET BACK TO WORK

You say you're toiling like a galley slave? America's top corporate chiefs think your workweek looks like a picnic compared to what's ahead in the age of global competition. ■ *by Sally Solo*

WITH U.S. MANAGERS working harder than ever, many have got to wonder whether relief is in sight (see preceding story). The answer from their bosses: Forget it. Far from easing up, CEOs overwhelmingly believe that large American companies will have to push executives *even harder* to keep up with global competition. That's the bad news. The good news is that the chiefs also understand that to get more from managers, their jobs must be made more rewarding, with more incentives and greater autonomy.

These are among the findings of the latest FORTUNE 500 CEO Poll. Clark Martire & Bartolomeo, an independent opinion research firm, conducted the survey between January 16 and 25. Some 206 CEOs of FORTUNE 500 and Service 500 companies answered our queries.

The CEOs don't doubt that their managers are already working harder than they used to. Almost two-thirds of those polled say their executive subordinates work longer hours today than ten years ago. They've had to, say the chiefs, because of restructuring and increased competition. Texaco CEO James Kinnear says heads of companies must "set objectives and monitor employee performance—and if that leads to longer hours, then so be it!"

How hard do you have to work for one of these bosses? Real hard. On average, they figure a high-level executive should work about 54 hours a week, and nearly a third of them think such an executive should work over 60 hours a week. Most of them think middle managers should work at least 50 hours a week. If that strikes you as too demanding, don't look for sympathy from these CEOs: They say they put in an average of 61 hours a week.

The chiefs don't foresee mass burnout among managers. Argues Kinnear: "It's self-correcting. People get tired and they go home." Nor does USX chief Charles A. Corry see any cause for alarm. "It always seems you operate in a crisis environment in business," he says. "The pace of management is quicker today, but the essence isn't different from what it was in the 1960s."

"Set objectives and monitor performance—and if that leads to longer hours, so be it!"

JAMES KINNEAR
Texaco

To be sure, a few CEOs believe that the pressure has become too intense and has to be lightened. Says David R. Carpenter, CEO of Transamerica Occidental Life Insurance: "We can't beat people into the ground anymore." San Francisco Federal Savings CEO Patrick Price adds, "We must recognize the signs when managers are being pushed too hard and help out with people, systems—whatever it takes."

Although the majority think managers are working harder than before and must work harder still, some also believe, a bit paradoxically, that an executive who spends all day and most of the evening at the office isn't necessarily a boon to the company. "I think it's absurd for business people to be

REPORTER ASSOCIATE *Sara Hammes*

Q A

Which of the following two statements comes closer to how you feel about the management of large U.S. companies?

Large U.S. companies will have to push their managers harder if we are to compete successfully with the Japanese and other global competitors	**77%**
As a result of restructuring and getting leaner, large U.S. companies are pushing managers too hard	**9%**
Not sure	**14%**

Q A

How many hours a week, on average, do you expect a high-level executive in your company to work? How many for a middle manager?

	High-level executive	Middle manager
40 hours or less	**2%**	**8%**
41–49 hours	**1%**	**21%**
50–59 hours	**58%**	**53%**
60–69 hours	**29%**	**9%**
Not sure	**10%**	**9%**
Average	**54 hours**	**49 hours**

Q A

Are executives in your company working longer hours than ten years ago, shorter hours, or about the same number of hours?

Longer hours	**62%**
Shorter hours	**2%**
About the same	**35%**
Not sure	**1%**

"Executives who work 80 hours a week are not likely to have the breadth of knowledge they ought to have."

WINSTON WALLIN
Medtronics

divorced from the community," says John Bryan of Sara Lee. Bryan estimates that he spends 20% of his time on good works, such as serving on the board of the University of Chicago. He requires similar commitments from his executives, even giving them time off from work for community service. He believes the "political and other" skills they acquire can then be applied back at the office.

Winston Wallin, CEO of Medtronics, also encourages altruism in his executives, with a measure of corporate self-interest in mind. "People get so focused on their own business," he says. "Executives who work 80 hours a week are not likely to have the breadth of knowledge they ought to have. Managers are likely to be more creative if they have a little balance in their lives."

So how do you get executives to compete more ferociously than ever—while maintaining balanced lives, of course? There were 206 different ideas about what kind of carrot and stick a company should use as motivation. One, offered only half facetiously by Sara Lee chief Bryan: "Fear as a motivator is pretty powerful these days." Most answers fell into three broad categories: Offer more money, offer more autonomy, and offer a sense of mission.

Fully 83% of the CEOs surveyed say they already give more incentive-based compensation to their managers than they did ten years ago. Asked what they could do to get more out of those executives, a CEO was most likely to say, "Become more incentive-oriented." Corry of USX explains, "It's a stimulating device. You get the manager to believe he can influence his own compensation." USX offers bonuses that may run up to 85% of an executive's base salary. Several CEOs touted employee stock ownership plans as a good way to give workers a stake in the company's success. "Employees as shareholders are very attractive," adds Bryan. "They have a slightly longer-term outlook."

Increasing the autonomy of managers serves two purposes in the age of the fat-free corporation. First, it means that whole layers of management, and the paperwork that goes with them, can be trimmed. Second, employees who feel trusted by the boss are freer and more willing to do what's best for the company. Says Hasbro CEO Alan G. Hassenfeld: "If you treat people well and they have responsibility and authority, they'll produce. People should be incentivized and excited about what they're doing, and they'll perform well." At PPG Industries "everyone is called a manager because each of us—engineer, truck driver, secretary, etc.—manages an asset or a function," says Chief Executive Vincent Sarni.

The same CEOs who advocate giving underlings a lot of leeway also emphasize the importance of giving them guidance and a reason to do what they do. "I call it the 'all singing the same song' theory," says U.S. Bancorp CEO Roger Breezley. Super Valu Stores CEO Michael Wright says, "People need to feel there's a purpose in their jobs. They need to know they're working for more than a paycheck." Super Valu Stores' purpose, Wright explains, is to help entrepreneurs—the store owners his company services—succeed.

The CEOs endorse another route to working better, one that's easier identified than followed: eliminating work that doesn't really need to be done. Complains Breezley of U.S. Bancorp: "We automate and automate and automate, and the paperwork still grows and grows. We are documented to death." Robert G. Sharp of Keystone Provident Life Insurance argues, "We should be putting people on the critical jobs that need to be either improved or eliminated. Managers should examine all functions on a must-have, not a nice-to-have, basis."

In Japan, when a worker dies from exhaustion, they call it *karoshi*, or "death from overwork." There may still be time to prevent the problem in the U.S. before things get bad enough to name it. But are CEOs interested in tackling the problem? F

Q A

On average, how many hours a week do you devote to your job?

Under 50 hours	2%
50–59 hours	28%
60–69 hours	45%
70–79 hours	21%
80 hours or more	4%
Average	61 hours

Q A

Is the amount of incentive-based compensation in your managers' pay packages greater than it was ten years ago, less than it was, or about the same?

Greater	83%
Less	2%
About the same	12%
Don't know	3%

Q A

How should large U.S. companies better manage their executives?

Become more incentive-oriented	27%
Encourage productivity, creativity, innovation, and risk taking	27%
Give them more autonomy and decentralize decision-making	21%
Get them to work smarter, not harder	20%
Recruit and train better-qualified people	13%
Develop a corporate culture or mission, plan for it, and communicate it	10%
Push managers to work harder	9%
Focus on the long term	8%
Encourage better communication	5%

Totals more than 100% due to multiple responses.

"People need to know they're working for more than a paycheck."

MICHAEL WRIGHT
Super Valu Stores

A HEARTLAND INDUSTRY TAKES ON THE WORLD

America's home appliance manufacturers have seen Paree. For their new rivals in Europe, life would have been simpler if they had stayed down on the farm. ■ *by Thomas A. Stewart*

NOTHING IS MORE American than household appliances. You'll find Maytag's home offices across the way from a seed store in Newton, Iowa. General Electric's appliance division is stabled a few furlongs from Churchill Downs, venue of the Kentucky Derby. Only 12 flights a day land in Benton Harbor, Michigan, home of Whirlpool. White Consolidated Industries (WCI) may be owned by Sweden's Electrolux, but its U.S. appliance headquarters is outside Columbus, Ohio. Each of the big four is nearer to a farm than to an international airport.

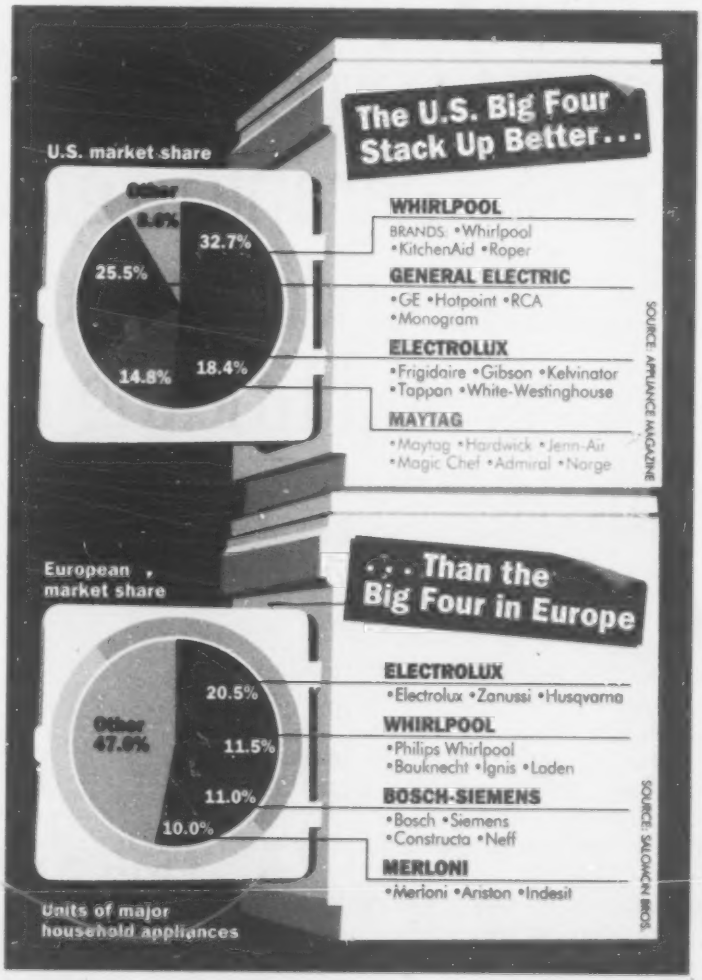
The market is all-American too. A quarter of the appliances sold at retail come from Sears, "America's store." Exports were just 6% of sales in 1989, and except for microwave ovens, imports scarcely exist. For traditional white goods—refrigerators, freezers, washing machines, dryers, ranges, and dishwashers—98% of what is sold in America is made in America.

But in little more than a year, these heartland companies have pumped out $1.2 billion to enter world markets, primarily in Europe. GE formed a joint venture with General Electric Co. (no kin), Britain's biggest appliance maker. Maytag swept up Chicago Pacific Corp., owner of Hoover, known in the U.S. for vacuum cleaners but in Britain and Australia for major appliances as well. On the Continent, Whirlpool became the No. 2 producer last year when it bought 53% of Philips' appliance business. And that's just the beginning; more investment in Europe—another billion or so—is yet to come.

As a result, the appliance makers suddenly—the three U.S. companies made their moves within weeks of one another—opened another front in the brutal war for market share. Theirs is a ferociously competitive industry, where everyone sweats the details of costs, margins, and brand positioning. Says Roger Schipke, GE's senior vice president of appliances: "This war will be fought in the trenches, with bayonets."

Why go global? Simple: After four decades of rising sales and relentless consolidation, the American white-goods business is no place to make serious money. The market is as mature as your great-aunt Maude. Unit sales plateaued at 28 million in 1987 and are expected to fall more than 2% in 1990, following housing into a demographic trough.

But couldn't these companies grow by knocking out the competition? No way. The big four are the survivors of a 40-year elimination tourney that made hard punchers like General Motors, Ford, and Westinghouse cry "No mas!" In 1945 there were 250 U.S. appliance makers; now, for every major appliance but microwaves, the big four control at least 88% of the market. Each has established itself with strong brands in all major appliances at all price points (see chart). Even WCI, a collection of castoffs like Westinghouse, Frigidaire, and Kelvinator, has begun to reposition its grand old names, making a coherent picture from what was, in the words of Kathryn Rudie Harrigan, a professor at Columbia's business school, "a crazy patchwork of junk." Without clearly defined brands, says Leif Johansson, who runs Electrolux's worldwide appliance operations, "you don't have a story to tell to the



Europe's home appliance market is ripe for an American-style consolidation. Among the hungry: GE/GEC (European market share: 5%) and Maytag (2%).

consumer and the retailer."

Nor can U.S. appliance makers prosper by cutting costs. They've already done that. Says Marvin Stern, Sears' vice president for home appliances and electronics: "The manufacturing efficiencies these guys have found are stunning." Since buying WCI in 1986, Electrolux has spent more than $500 million improving old plants and building new ones. GE automated its huge Louisville, Kentucky, plant in two major upgrades and, over a ten-year period, cut the work force in half while increasing output 30%. Walk through anyone's factory and you'll see big rolls of steel being stamped by machines as lonely as a Maytag repairman, and modest dumpsters slowly—very slowly—filling up with pieces of scrap not much bigger than coins. Appliance manufacturers are so good at the cost game that if they had been making the Chevy Caprice since 1980, its price would have gone from $7,209 to $9,500 (actual 1990 sticker price: $17,370).

Quality, too, is at an all-time high. Whirlpool boasts that service calls per 1,000 appliances dropped 50% in the 1980s, and the company vows to cut them in half again in the 1990s. Not surprisingly, operating margins have been squeezed; consumer prices are up 14.1% since 1986, but major appliances cost just 1% more. The operating margin at Whirlpool slid from 10.9% in 1984 to about 9.5% last year; at Maytag, from 19.5% to 11.5%. Nothing suggests WCI and GE, which do not break out appliance results, did better.

No wonder Europe looks tempting. As Europeans fill their homes with more appliances, sales should grow 4% a year—in a market already 25% bigger than the flat American market. And as trade barriers fall and product codes are standardized for 1992, appliances will become more pan-European, opening the door for large-scale manufacturing. The European industry, which has excess capacity and some 250 manufacturers, cries out for the restructuring that is mother's milk for the Americans and for Electrolux, which made a staggering 100 acquisitions in the 1980s.

All this change won't happen overnight. There are big differences between American and European appliances and, within Europe, strong national preferences. Americans make free-standing behemoths; Europeans prefer smaller built-ins. In France, 80% of washing machines are top-loaders; elsewhere, 90% are front-loaders. Nine out of ten German ranges are electric; elsewhere, gas is the rule.

Selling and marketing are far less consolidated than in the U.S. Only in Britain do big chains play a powerful role; mom and pop stores dominate in Italy, and kitchen-design specialists in West Germany. Despite strong national brands like France's Thomson and GEC's Hotpoint in Britain, no brand has more than 5% of the market.

For all these differences, Whirlpool CEO David Whitwam still says, "What strikes me most is how similar the U.S. and European industries are." The technology and materials are the same from Salonika to San Diego. Products are becoming more alike. Consequently, companies can buy steel and components on a global basis.

A year after their entry into Western Europe, the three American companies are ready to move in from the beach. For GE and Maytag, that first year was rough. The British market, their base, tanked last year as 15% interest rates drove sales down 3%. Maytag responded with a top-to-bottom restructuring: It dismissed hundreds of employees, revamped assembly lines, and exported its vaunted system of quality control and incremental, inexorable improvements.

Maytag's next move will be across the Channel. With long-term debt at 51% of capitalization, its only realistic option is a joint venture with a Continental manufacturer. But, says Frank Vaughn, president of Hoover Group, "wherever we go to talk—Thomson, AEG, Merloni, Ocean, Bosch-Siemens—GE has been too."

GE's Roger Schipke isn't just crossing the Channel. He is preparing a full-scale invasion. His goal is for European sales of white goods to match

JENNY NOVAK

With a flat home market, Whirlpool CEO Whitwam can wrap himself in many flags.

JAMES SCHNEPF

Maytag's Daniel Krumm has lifted quality. The challenge: to get profits back up.

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his $5-billion-a-year U.S. business by the mid-1990s; appliances now bring in $1.1 billion a year at GEC. To accomplish that, GE must turn itself into another Electrolux, assembling a constellation of companies, then looking for a way to manage them. The GE/GEC joint venture has a $400 million war chest. Schipke won't identify any targets, but Bosch-Siemens, with white-goods sales of $3.2 billion, would get GE a long way toward its goal.

Of the Americans, Whirlpool starts from the strongest position—and is taking the biggest gamble. By paying $361 million for 53% of Philips' appliance business, CEO Whitwam raised his debt to 43% of total capital. At the end of 1991 he's likely to get a bill for $580 million, when it's time to buy the rest of Philips' business. (According to their contract, the decision to sell the remaining 47% to Whirlpool can be made by either party.) Says Whitwam: "We can afford it."

"The only people who say you can't have a pan-European brand are the people who don't have one themselves."

Whirlpool will be trying to create the first truly global brand name in appliances. In January it renamed its flagship European brand Philips Whirlpool, and launched a $118 million advertising campaign to establish the new name. Some competitors question Whitwam's strategy, particularly since the company will have to drop the Philips name in 1998 and the brand will become simply Whirlpool. Says one competitor: "You can't find any example of someone building a mass-market brand from scratch."

OBVIOUSLY, Whitwam thinks he can: "The only people who say you can't have a pan-European brand are the people who don't have one themselves." To make Whirlpool International work, Jan Prising, an Electrolux alumnus who is its new head, is dismantling Philips' organization—a cumbersome matrix of manufacturing and marketing. He is substituting a product-line organization like the one recently installed in Benton Harbor. With three brands (Bauknecht, Philips Whirlpool, and Ignis) slotted at the top, middle, and low ends of the market—a structure identical to its U.S. triad—Whitwam is satisfied he has the brands and products he needs. "We all have the same steel, the same technology," he says. "The soft issues—management, accountability—are what differentiate us. They are the difference between winning and losing."

The company to beat is Electrolux, with more than 20% of the market and a strong presence in every country from Finland to Portugal. The first to foresee a global appliance business, Electrolux now owns Zanussi (Italy's biggest appliance maker), Thorn's appliance business in Britain, and three companies in Spain, in addition to WCI. Unlike the Americans, who think that the race to acquire European manufacturers has just begun, Electrolux believes it's essentially over. Says Leif Johansson: "Even if GE bought four or five companies, it would not dramatically change the picture."

What might change the picture dramatically, in Electrolux's view, is growing consumer demand in Eastern Europe. According to Joseph McGowan, president of WCI's major appliance group, Western Europe now has about 10% more factory capacity than it has demand. "If the East Europeans can get the currency," says McGowan, "that excess capacity will be wiped out overnight." McGowan also visited the Soviet Union in December, touring military plants that could be converted to white-goods production.

The battle plan for the global white-goods war is becoming clear. The toe-to-toe slugfest in the U.S. will continue. The European industry will consolidate—some say quickly, some say slowly, but the direction is certain. It will be ten years, predicts Frank Vaughn of Hoover, before "we'll be able to look up and see the players sorted out." By then, most in the industry agree, the landscape will be like America's: perhaps half a dozen players matched up in each market at every price point, battling for market share. Then, says Vaughn, "we'll make some money in this business."

But what if they can't? What if the American-style double bind of cost cutting and margin squeezing comes to prevail in Europe? Maytag CEO Daniel Krumm stares off in the direction of the Newton Seed Co. "If we can get our act together in Asia," he says, "well, to hell with Europe!" F

REPORTER ASSOCIATE *Wilton Woods*

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TODAY'S LEADERS TALK ABOUT TOMORROW

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EDITOR'S DESK

WELCOME to our birthday party! The presents aren't for us but for you, wrapped in this plump package, an issue we hope you will find particularly enjoyable and useful. It's thanks to you that we have turned 60—and a pretty scrappy 60 at that, with our circulation and advertising at record highs.

To celebrate, we offer not only a new perspective on the previous six decades but also a fresh view of the one to come. We are here to tell you that the 1990s will belong to the swift, to those people who grasp the importance of the change all around us—and quickly act on it. The prospect that this may well be one of those rare turning points in human affairs emerges from the views of the 126 world leaders, thinkers, and trendsetters whom FORTUNE interviewed, starting on page 30. Speaking about the future of everything from business and investing to science, politics, and society, they present a striking forecast of dramatic change. How did we pick these extraordinary thinkers? We asked every member of the staff you see on this page, from top editor to cub reporter, to propose the best minds he or she knew of to speak on the topics of greatest import (or fascination) to our readers.

Some are familiar names. GE Chairman Jack Welch describes the fundamental changes coming in management. Jerome Kohlberg foresees equally profound shifts in the financing of corporate America. Zoologist Edward O. Wilson tells of an economic bonanza we could reap from obscure species of plant and animal life—if we don't destroy them first. Most are surprisingly upbeat. One of my own favorite quotes is from economist Lawrence Summers: "A country whose major fiscal troubles could be solved with a 50-cent-a-gallon gasoline tax doesn't have big problems compared with some other countries."

Optimism of another kind, gritty and challenging, comes from the eclectic group of teens who talk about their expectations in "How High School Kids See the 1990s." They aren't so sure that today's leaders have what it takes to change the world for the better but are determined that *they* will.

And what do FORTUNE's own people expect? After all, says senior editor Charles Burck, who spent months supervising this issue, "we have as intelligent and diverse a group of individuals as you can find anywhere in one organization." The entire editorial staff met for a full day to discuss and argue the critical issues we think face the U.S. and the world. That meeting is the basis for the essay that leads off the magazine.

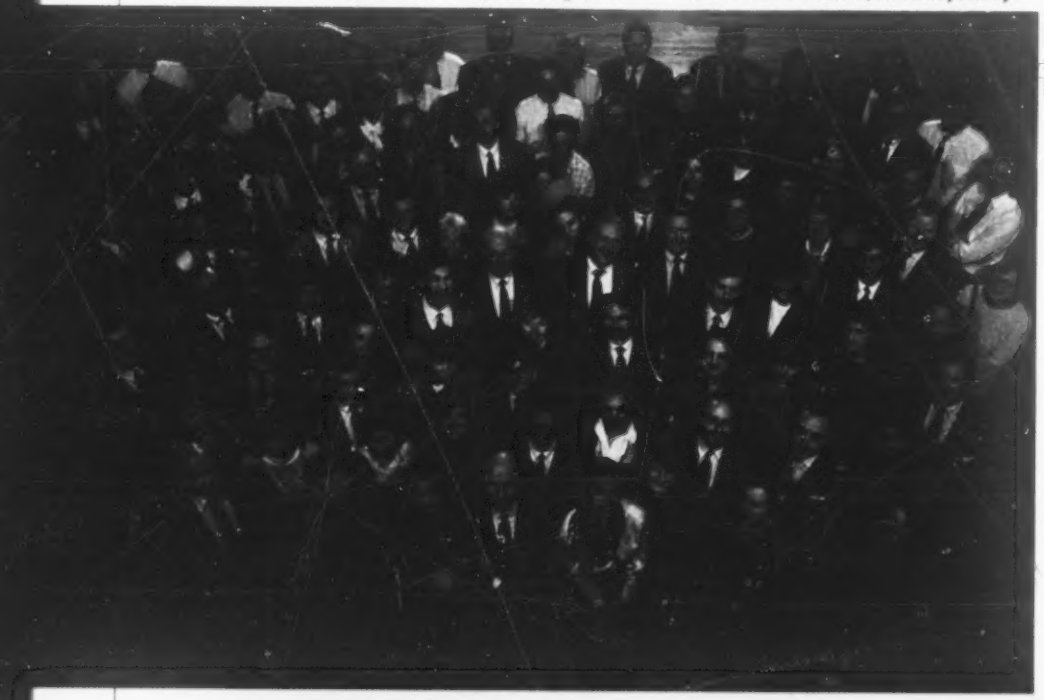
It's easy to forget how much we can learn by looking back. Columnist Dan Seligman has crafted a fast-paced review of the triumphs and pratfalls of American business from the time FORTUNE began observing it at the start of the Depression to the rise of conglomerates and the death of Communism. Executive editor Allan Demaree unearthed treasures from old articles, including the frozen-food industry's chilly reception and the glory years of Cadillac. For pure visual delight, Michele McNally and Elizabeth Krist chose images from the 1930s that defined the art of industrial photography.

So read, enjoy, and, again, happy birthday to *you*, who have made it possible for us to reach this milestone.

Marshall Loeb

MANAGING EDITOR

The FORTUNE staff converges—not easy to arrange, since some (like those at bottom) are always away.



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FORTUNE

"The U.S. is going to be the dominant world power for as far ahead as I can see."

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ABOVE: Zbigniew Brzezinski, caught by Louis Psihoyos (Matrix) in a mirror in his office.

COVER: A metal sculpture incorporating new Intel microprocessors, constructed by Nicholas Fasciano and photographed by Roberto Brosan.

THE 60th ANNIVERSARY

AN AMERICAN VISION FOR THE 1990s 14

When FORTUNE began in 1930, America had a vision—in fact, it has had many visions over the years. Most have been realized, some beyond our wildest dreams. So what are America's aspirations now? In this article we set forth new goals and offer our best estimate of what to expect by the year 2000—in politics, in the economy, in science, and in society at large.

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Emerging from the Great Depression, Americans believed that the best was yet to come. They were right—and they believe it still. *by Louis Kraar*

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Toss out your old assumptions. Rarely has a decade started with so many fresh prospects. Global revolutions are under way in managing, in politics, in technology, in communications. We are entering an era of boundless mobility and competition for business, for ideas, for people. Listed below are some of the world's most stimulating leaders and thinkers. See what they expect in their fields, delineated at right.

John F. Welch Jr., Lee Iacocca, Ross Perot, Reuben Mark, Thomas J. Watson Jr., Steve Jobs, Max DePree, Maryann Keller, Donald Ephlin, Yutaka Kume, Nobuhiko Kawamoto, John Bookout, William T. McCormick Jr., Charles Lazarus, Leslie H. Wexner, Jean-Marie Descarpentries, Gareth Chang, Leonard Greenhalgh, Edward E. Lawler III, Steven C. Wheelwright, Linda Johnson Rice, J. Bruce Llewellyn, James R. Houghton, Stephen A. Garrison, Percy Barnevik, Alfred Rappaport, Michael C. Jensen, Anthony J.F. O'Reilly, Walter Wriston, Daniel Hillis, Kazuhiko Nishi, Hiroyuki Mizuno, Alan Kay, Carver Mead, Bill Gates, John L. Clendenin, Arno Penzias, Stan Shih, Gordon Bell, T. J. Rodgers, Abraham Pais, George Heilmeier, Paul C.W. Chu, Robert Jastrow, Carl Sagan, Dixy Lee Ray, Marshall Hahn, Edward O. Wilson, Talbot Page, Frank Popoff, Arnold Relman, Leroy Hood, Robert Gallo, Solomon Snyder, Jerome Kohlberg Jr., Lewis Ranieri, Paul E. Tierney Jr., John M. Hennessy, Benjamin F. Edwards III, Merton H. Miller, Robert C. Winters, L. William Seidman, Charles S. Sanford Jr., Kuniji Miyazaki, Glen Renfrew, Sir John Templeton, Allan Meltzer, Michael J. Boskin, Manuel H. Johnson, Frank Levy, Alfred D. Chandler Jr., Barry P. Bosworth, Lester C. Thurow, Lawrence H. Summers, David T. Ellwood, Rupert Murdoch, Jason McManus, Christopher Whittle, Paul Kagan, Nicholas Negroponte, Trip Hawkins, Jay Chiat, Philip H. Geier Jr., Roger Enrico, Edgar Bronfman Jr., Allen Sheppard, David J. Stern, Zbigniew Brzezinski, Jerry Hough, Nikolai Shmelev, Jacques Delors, Sir Alan Walters, Norbert Walter, Robert Hormats, Hernando de Soto, Gurcharan Das, Victor Fung, Reiichi Yumikura, Hiroshi Kimura, Winston Lord, Kevin Phillips, William Frederick, John McClaughry, Antonia Hernandez, Jimmy Carter, Robert Bork, Shelby Steele, Betty Friedan, Felice Schwartz, Edward F. Zigler, Vartan Gregorian, Allan Bloom, Bill Clinton, Juanita Kreps, Peter J. Ferrara, Kenneth Rosen, Ron Kovic, John Waters, Charles Murray, Vincent Lane, Julian Simon, Daniel Callahan, Robert Nozick, Daniel Levinson, Michael White, O. B. Hardison Jr.

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"The winners of the Nineties will be those who can develop a culture that allows them to move faster."

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"Customers must be the center of your management philosophy."

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"There are more opportunities today for the black entrepreneur than in many years."

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"The opportunities and achievements in biology in the next 30 years will parallel the golden period in physics."

PAGE 92

"The general rule for marketers in the U.S. is that nobody needs anything more."

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"There's every sort of culture in this country. If we want to be strong, we have to be together. Or else we have nothing."

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The opportunities are better than ever—but so's the competition. Managers and others agree CEOs can't do it alone. Here's their advice on how to get *everybody* fighting the same fight—the first step to progress.

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The future promises an end to drug addiction, rheumatoid arthritis, and other diseases; software that does your research while you sleep; computers you can talk to and that talk back—and R&D directors who eat raw fish.

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Look for fewer financial takeovers and more strategic ones, U.S. banks going international, and the largest securities market winding up in Asia. Meanwhile, stock prices may double this decade.

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Maybe the world *can* agree on something. As competition for markets and capital gets hotter, governments are discovering that they share the same policy goals: maximum real output with the lowest inflation.

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The mass market may be dead. Mass media are not. Communications companies are getting bigger as their public is fragmenting. How will message bearers reach them? Personalized magazines? Yes. HDTV? No way.

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FORTUNE used the camera as the interpreter of modern industrial civilization, creating a partnership of words and images and providing industrial photography with its most striking showcase. *by Andrew Kupfer*

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Early advertisers in FORTUNE bucked industry trends during the Depression to depict Corporate America as opulent, powerful, and sophisticated. Then a note of pomposity crept in. *by Patricia Sellers*

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It was hard to defend when the deflation rate was 11.6% and everyone was broke. Sixty years later, capitalism doesn't need defenders. *by Daniel Seligman*

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Come, travel back with us, as we witness once again historic events that shook the world, cultural trends that reshaped men's minds . . . and the curious monopoly of Dy-Dee Doll.

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HOW HIGH SCHOOL KIDS SEE THE 1990s 221

They're intimidated by the Japanese, distrustful of leaders, critical of absentee parents. Also resoundingly pro-business—and optimistic. *by Stratford P. Sherman*

THE U.S. MOOD: EVER OPTIMISTIC

Emerging from the Great Depression, Americans believed that the best was yet to come. They were right—and they believe it still.

■ by Louis Kraar

THAT MOST AMERICAN of character traits—optimism—is as strong in this era of fierce global competition as it was when the nation was triumphing over the worst economic depression in modern times. When FORTUNE published a poll of public attitudes in 1939, the mood of the country was "sweeping confidence that for the individual the present is better than the past, that the future will be better than the present." An equally gallant faith in tomorrow emerges from a national survey of 1,000 Americans conducted this year for FORTUNE by Clark Martire & Bartolomeo Inc. The poll posed the same questions that FORTUNE asked the general public in 1939, and in many instances the results are startlingly similar.

Remarkably, the nation's buoyant attitude toward the future has endured—even strengthened—after five decades of national and international tumult. More than three out of four people still believe that American industry can create opportunities comparable to those that opened up in what the 1939 poll called the great age of expansion—the development of the West and the building of American industry in the late 1800s and early 1900s. Says Charlotte Gillis, a retired technical illustrator in Canoga Park, California: "Global competition doesn't mean that horizons are limited, but only means that many more people are looking at the opportunities. There's always something to be done, something to be improved."

The American dream of upward mobility is more widespread than ever. Almost two out of three Americans believe they have a good chance for advancement in the years ahead. Today 79% feel they are more likely to succeed than their fathers, up from 61% in the FORTUNE poll of 1939. And 66% now believe that the next generation's opportunities will be even better than theirs, compared with 61% in 1939.

Most notable in the ranks of today's optimists are American blacks, 70% of whom believe they have a good chance for advancement in the coming years, vs. 62% of the whites. (The 1939 survey included no racial breakdowns.) About 88% of blacks believe that their generation's chances for success are better than their parents' were, while 77% of whites feel that way. Moreover, blacks are confident that their opportunities will continue to expand: Some 73% of them—compared with 65% of the whites—believe the next generation will be better off than the present one.

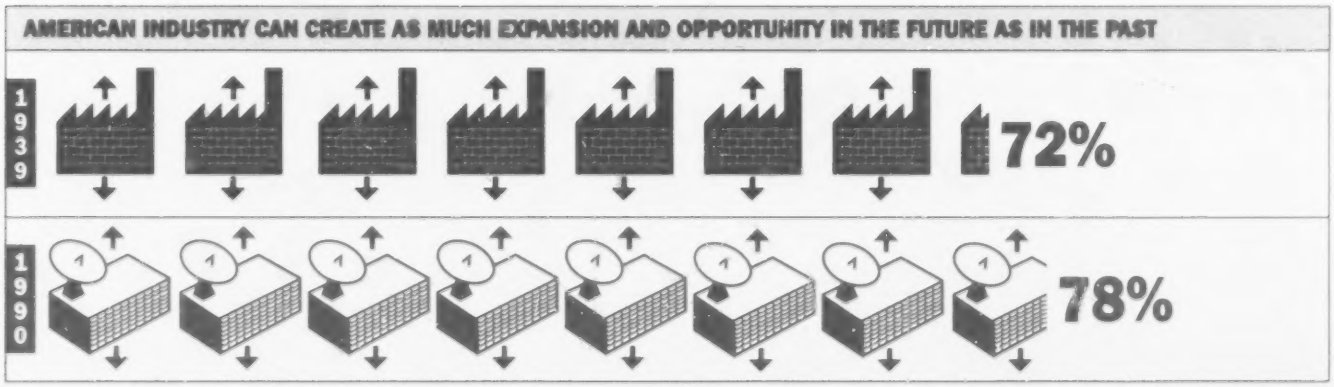
Ah, youth! People from 18 to 25 of all races and from all parts of the country turn out to be the most optimistic. Some 91% of them now believe they are likely to get ahead. In 1939 the young were also overwhelmingly the most hopeful age group: 74% expected brighter personal futures.

For all the economic advances they have already experienced or expect to gain, Americans resoundingly reject class distinctions. Today 59% of the FORTUNE sample view themselves as middle class, up slightly from 1939, when 55% did.

Beneath the present ebullience, however, is an undercurrent of dissatisfaction that was not common among Americans in the late 1930s. In that earlier era social historian Frederick Lewis Allen recorded seeing four or five street beggars during a ten-block

REPORTER ASSOCIATE *Sandra L. Kirsch*

RISING EXPECTATIONS FOR ECONOMIC EXPANSION

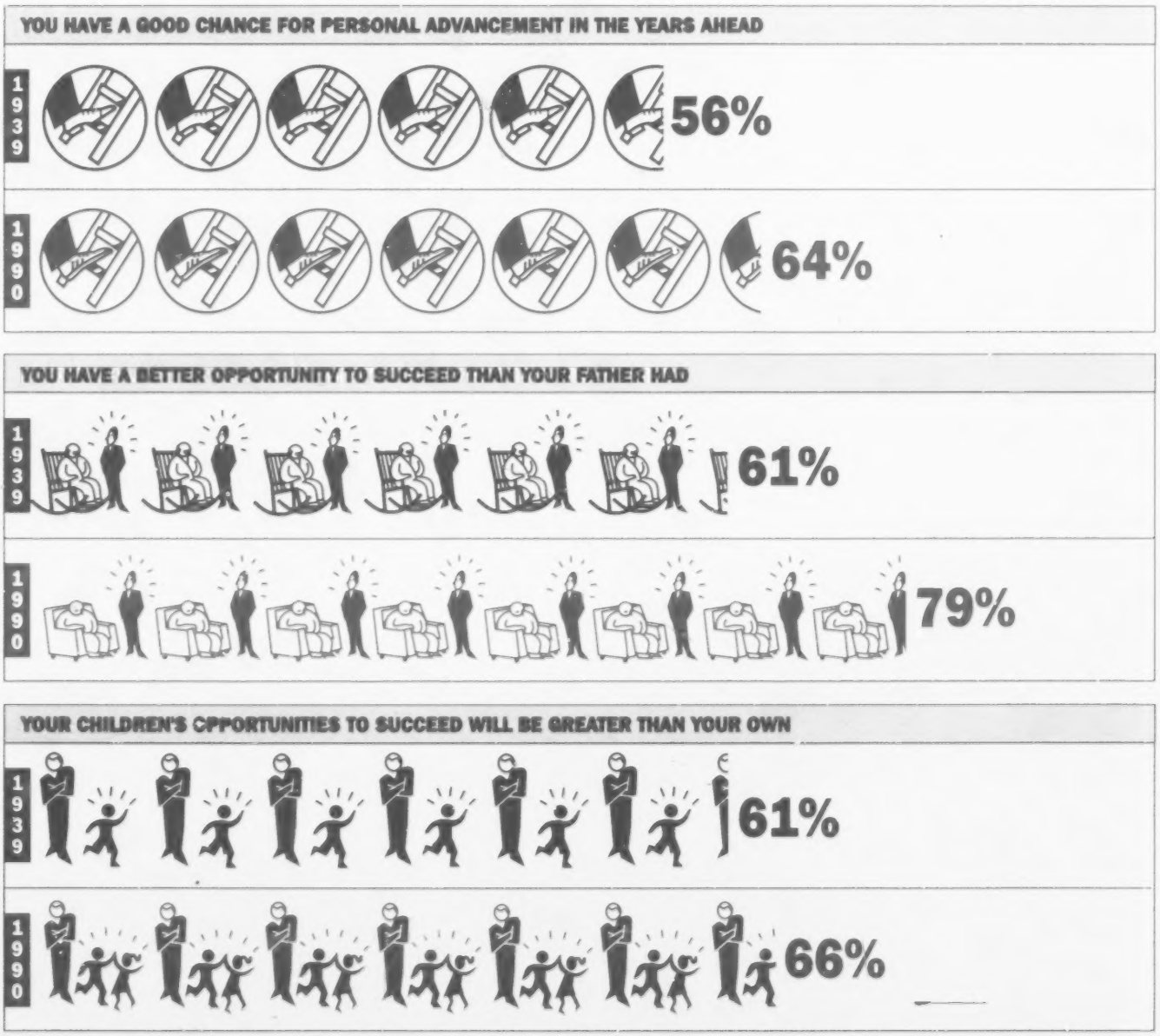


CHARTS BY NIGEL HOLMES

walk in New York City and homeless people sleeping in doorways and on park benches. The urban underclass is just as visible in these more prosperous times, perhaps more so. But people seem to be less accepting of social inequities now than they were, because along with the economic expansion of the past five decades have come higher expectations for everyone.

Optimism is an American habit, not necessarily a careful judgment of the future. As novelist Mary McCarthy has put it, "The happy ending is our national belief." Scratch some of those who expressed optimism in the latest FORTUNE survey, and their upbeat views turn out to be highly qualified. Says Marie Scalfani, who owns a telephone answering service in Ozone Park, New York: "I feel the economy can expand if we put our minds to it, if business stopped going overseas for cheaper labor. We have too many poor and homeless who need job opportunities." Ann Butler, arts administrator at Film, Video/Arts in Brooklyn, questions whether the expansion can continue: "We've grown accustomed to a certain lifestyle, which is at odds with what can really come out of our economy." Steve Rostoker, a computer programming consultant in San Diego, is also worried: "I think there are only a few frontiers left, and they are limited. You'll have to go to other planets for new markets." *continued*

HIGHER PERSONAL HOPES FOR THE FUTURE



The poll's most dramatic finding is the emergence of what FORTUNE (December 4, 1989) calls a trust gap between companies and their workers. In 1939 and in the latest survey, FORTUNE asked, Do you think the interests of employees and employers are by their very nature opposed, or are they basically the same? Only 25% believed the interests were inherently adversarial in 1939, vs. 42% today. Faith Popcorn, whose firm, BrainReserve, spots trends for corporate clients, attributes the shift of attitudes to leveraged buyouts and takeovers that often seem to enrich senior officers at the expense of the working troops. Says she: "Books like *Barbarians at the Gate* and *Liar's Poker* are giving us the inside poop, and it stinks. There are no more company men because the company has sold them out and laid them off too many times." The satirical film *Roger & Me*, which blames General Motors Chairman Roger Smith for the sagging economy of Flint, Michigan, is a sign of the times, she says: "Individuals are held responsible for corporate actions and cannot hide behind the logo."

Other forces, of course, have helped widen the gap between the managers and the managed. Coming out of the Great Depression, employees needed to have more confidence in corporate leadership than do babyboomers, who have matured during the longest peacetime expansion in U.S. history. Says Ilene Gochman, vice president of Opinion Research Corp. of Princeton, New Jersey: "Nowadays there is a better-educated work force, people are more sophisticated, and this makes them generally less trusting of everything. The craziness of leveraged buyouts and management perks feeds that skepticism."

LOVE, MONEY, AND RACE RELATIONS

PUBLIC OPINION on sex, money, and race has come a long way. Just how far can be seen in the answers to several surveys that FORTUNE conducted in 1939. Sexual relations before marriage? Wicked, said 47% of women and 28% of men—back then. Unfortunate, opined 35% of women and 52% of men. Only 10% of both sexes approved of premarital intimacy.

If two working people are in love but their individual earnings are low, should they get married and stay at their jobs, or wait until the husband can support the family? Nearly 39% of Americans thought the altar should wait. Only 54% believed that a married woman should hold a job.

Almost 24% of those polled thought there ought to be a law limiting the amount of money an individual could earn in a year. But 61% believed it was all right for some Americans to earn more than the U.S. President, who was then making $75,000.

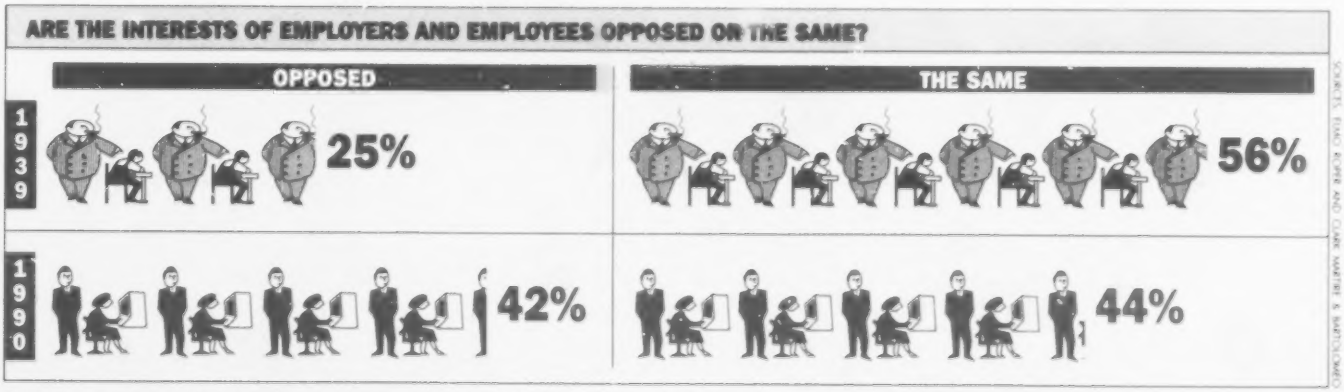
The Depression failed to dampen entrepreneurial spirit. About 50% of Americans said they would like to go into business for themselves, and most of them believed they would. In the meantime, 61% wanted a high-paying job—and would settle for a fifty-fifty chance of getting a promotion or getting a pink slip to have one.

People then had stingier ideas about basic freedoms than today. Only 49% believed that all citizens had the right to speak out on any subject at any time. Over 70% of those surveyed believed that blacks generally had lower intelligence than whites, and 41% favored laws restricting where blacks could live. Almost 30 years later the U.S. Congress passed the Civil Rights Act of 1968, which prohibited housing policies that promoted segregation.

Protectionist trade policy, while still enjoying broad support, is less popular than it used to be. In 1939, 59% of Americans polled thought that a high tariff on foreign goods made sense—it would give American products a price advantage. Only 47% believe that protectionism is a good idea today. That sentiment runs highest among the young, the less educated, and blacks.

What about taxes? Both FORTUNE surveys asked if revenues had to be raised, which would be the least painful way to do it. The first choice of 41% of the respondents in 1939 and 47% today: Hit tobacco, liquor, and luxuries harder. While only 21% of those polled in 1939 wanted to milk corporations for more money, 41% now prefer that approach. As for raising personal income taxes, 14% thought that was a good idea in 1939, when the top rate was 79%. Only 6% would like to see income tax rates increased today, when the top rate is 33%.

AMBUSHED AT THE TRUST GAP



Totals do not add up to 100%; the remaining responses were "don't know."

SOURCES: ROPER AND ORC MACRO INTERNATIONAL

■ GM'S FUTURE • THE MARKET IS SAFER THAN YOU THINK • WARREN BUFFETT'S GOOFS ■

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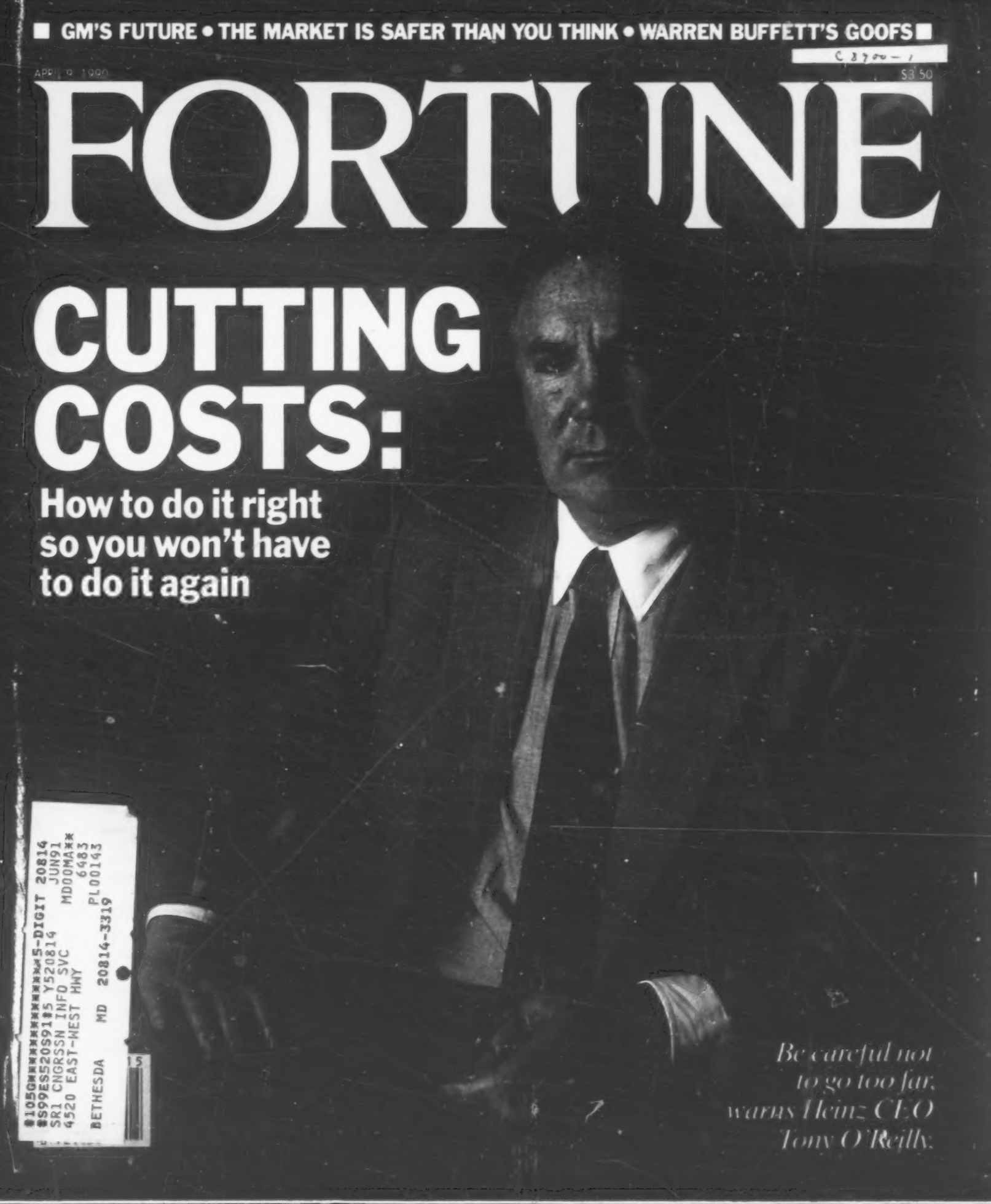
CUTTING COSTS:

How to do it right so you won't have to do it again



Be careful not to go too far, warns Heinz CEO Tony O'Reilly.

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FORTUNE

ABOVE: To improve its Tater Tots, Ore-Ida slowed its high-speed slicing machines, photographed by Glenn Oakley.

COVER: H.J. Heinz CEO Tony O'Reilly, photographed by Michael O'Brien.

"Costs exist for a reason. If you don't take the reasons away, the costs will return."

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MANAGING/Cover Story

COST CUTTING: HOW TO DO IT RIGHT 40

So far, downsizing simply hasn't delivered. Companies have gotten leaner, but not fitter. Learning from their mistakes, some managers have taken a new approach to downsizing—cut the workload, not just the work force. This idea even has a name: "right-sizing." *by Ronald Henkoff*

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Roger Smith's successor will inherit lots of talent and other formidable assets. But the job ahead is to lift profits, win back old customers, and woo young buyers. *by Alex Taylor III*

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A baby bust will soon shake industrialized economies everywhere. To cope, they must start encouraging immigration and discouraging early retirement. *by Louis S. Richman*

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Raiders and buybacks have shrunk the equity base, institutional investors are rattled—now may be the time to buy. *by William E. Sheeline*

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While amassing his own $3.7 billion fortune in real estate and retailing, Al Taubman has also made a bundle for his chums. *by Alex Taylor III*

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"I haven't seen one guy buy a car because it's got the cleanest tailpipe."

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"Young companies that used to dream of going public are now conniving how they can stay private."

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"We've been developing by borrowing technology from abroad. From now on, we'll do it ourselves."

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"It's far better to buy a wonderful company at a fair price than a fair company at a wonderful price."

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"These guys are trying to keep their stock price up, trying to stay sane, and they don't have time to watch the culture."

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"We have a saying around Bank of America. Kill the messenger only if he's late with the news."

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The Japanese are investing twice as much as U.S. companies—and that will make them even more competitive. Should the West be worried? You bet. *by Carla Rapoport*

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EDITOR'S DESK

TOP MANAGERS across the U.S. are sharpening their knives, preparing for another round of slashing overhead and slicing jobs. We hope they read our cover story first. As writer Ronald Henkoff makes clear, the most effective cost cutters will go about the task with surgical precision. They will rethink all aspects of their operations, from manufacturing to marketing, and attack the workload instead of the work force. Rather than bring back the brutal downsizing of the 1980s, smart executives will match their companies' strengths to the marketplace in an effort at "right-sizing." Their reward for all this effort: They shouldn't have to do it again soon.

GORDON CHIN

Henkoff: "Managers don't like to admit mistakes."

FORTUNE has been reporting on restructuring—both the corporate and the human side—for at least a decade. The genesis for this story was the simple question: Has cost cutting gone too far? We figured Heinz Chairman Tony O'Reilly was the perfect person to answer it. Five years ago we did a story looking at how he was closing factories, laying off workers, and speeding up production lines. The results—average annual earnings increases of 15%—were laudable.

But when Henkoff caught up with O'Reilly in New York, the Heinz CEO confessed that his earlier strategy had hurt product quality and alienated workers. In Heinz's StarKist tuna canning factories in Puerto Rico and American Samoa, for example, the fish cleaners were so overworked that they were leaving tons of meat on the bone every day. Managers finally slowed down the production lines and added workers. Labor costs went up $5 million annually, but waste was reduced by about $15 million. As Julie Connelly, who edited the story, says, "It's clear that the only thing rampant cost cutting is sure to cut is employee motivation."

Like O'Reilly, many of the managers preaching rightsizing were among the most ardent downsizers a few years back. But getting them to talk was not easy. As Henkoff puts it, "Managers, like most people, don't like to admit mistakes." Still, after seven weeks of working the telephone and climbing onto airplanes, Henkoff turned up enterprises across the U.S. that have found effective new approaches to cost control, from Oryx Energy in Dallas to Eastman Kodak in Rochester, New York.

Henkoff, who concentrates on Midwest companies and business trends from his Chicago base, has been following the restructuring frenzy for several years. Formerly *Newsweek*'s European economics editor, he first reported on the subject in the mid-1980s as such European companies as Philips and Olivetti were paring employee rosters. Since coming to FORTUNE in 1988, Henkoff has continued to watch companies flounder after taking cost-cutting steps that promised more than they delivered. "You can become more efficient at what you're doing," he says. "But that really isn't very helpful if you are doing the wrong thing." His story shows how to do it right.

Marshall Loeb

MANAGING EDITOR

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This Tokyo family has a new status symbol, a Jeep Cherokee.

FOREIGN CAR SALES GO VROOM IN JAPAN

■ Surprise: Japan is the world's fastest-growing major market for imported cars. While Japan's auto exports dropped nearly 4% in each of the past four years, imports grew at an annual rate of 37%. The Japan Auto Importers' Association expects 33% growth this year. By 1995 imports could reach 10% of the country's car market, from 4.5% now.

Behind the surge is a growing Japanese appetite for the status of imported cars plus the buying power of the strong yen. At the same time, the government has eliminated tariffs and harrowing inspection procedures.

West Germans have worked hardest to take advantage of the new market and are the big winners (see chart below). While **Chrysler** CEO Lee Iacocca grumbled that Japanese auto manufacturers wouldn't distribute Chryslers, **BMW** set up its own dealer network. BMW sold 33,076 cars last year, as many per capita as in the U.S. **Volkswagen-Audi**, which has sold its cars through an independent dealer that specializes in imports, will open exclusive VW dealerships this year.

Iacocca still hasn't gotten anywhere with his Chryslers, but within a few weeks **Honda** is expected to announce that it will import his company's Jeeps, which are considered a status buy. At present, Chrysler sells all its products through a tie-up with a Japanese trading company. Honda also imports Hondas from its "transplant" factories in the U.S.

Ford Motor, which owns 25% of **Mazda**, sells cars through Autorama, a cooperative retail venture the two companies control.

General Motors sells its products through an independent dealer that has its own retail systems. (For more on GM, see Autos.) **- Susan Moffat**

JAPAN'S TOP IMPORTED CARS

COMPANY / COUNTRY	REGISTERED IN 1989	% change from 1988
Volkswagen-Audi Group (West Germany)	48,900	24.7
BMW (West Germany)	33,076	23.3
Mercedes-Benz (West Germany)	31,511	30.3
Rover Group (Britain)	10,655	144.6
Citroën-Peugeot (France)	8,494	77.6
General Motors (U.S.)	7,231	49.4
Volvo (Sweden)	7,122	53.7
Ford Motor (U.S.)	5,967	56.7
Honda USA	4,897	-12.9
Fiat Group (Italy)	4,242	5.1
Porsche (West Germany)	4,081	67.2
Jaguar* (Britain)	2,703	63.6
Opel** (West Germany)	2,643	488.6
Saab (Sweden)	2,631	25.1
Chrysler (U.S.)	973	119.6
Kia (South Korea)	973	N.A.

*Acquired by Ford Motor in February 1990. **A subsidiary of GM since 1929.

SOURCE: JAPAN AUTO IMPORTERS' ASSOCIATION

A Maruti in New Delhi for lottery winners only

INDIA'S NEW AUTO: TOO MANY BUYERS

■ When Indian automaker **Maruti Udyog** announced a new model—the Maruti 1000—some 250,000 applications rolled in, ten times what the company will manufacture in 18 months. To handle the demand (and put the brakes on speculators who want to sell the hot car for huge premiums), Maruti Udyog resorted to a lottery. Would-be buyers deposited about $1,500 each, 10% of the car's price, and their names were put into a computer. The drawing, supervised by a supreme court judge, produced the names of the first 25,000 owners. They still face a long wait: Production doesn't begin until October. The losers got their money back.

Maruti Udyog—owned by the Indian government (with 60%) and Japan's **Suzuki Motor** (40%)—made an estimated $30 million in 1989 on sales of $726 million. The lottery produced an $11 million windfall: interest on deposits totaling $369 million. **- Rahul Jacob**

CASTRO'S EXPORTS

■ If you're looking for such classics as a 1959 Cadillac, a 1951 Olds Super 88, or *any* fintail De Soto, Cuba is a good place to go. Barred from buying U.S. cars since the 1962 embargo, owners have preserved the ones they had, many dating to before Fidel Castro's 1959 rise to power. Provided the cars have not been excessively patched with Soviet parts, they are now worth a small fortune in the U.S. A 1959 Cadillac convertible in mint condition sells for $106,000.

Enter the Cuban government, which is desperate for hard currency. It reportedly is selling some of its antique autos to foreign tourists

Hot, a classic Buick in Havana

BY SUSAN E. KUHN

MUNIS, STATE BY STATE: BARGAINS THAT BEAT THE TAX MAN

■ Ah, munificent municipals. For months municipal bonds have been offering sumptuous yields in comparison with their taxable counterparts. Now, with stocks stalled and junk bonds in the dumps, munis may be the best game in town. And you don't even have to look hard for a great deal. The very best bargains are in your own backyard.

Muni appeal is a simple game of numbers. Most experts put a buy order on municipals when their yields equal 80% or more of those for taxable Treasuries. Currently 30-year Treasury bonds are paying 8.6%, while municipal bonds yield 7.3%. The differential: a respectable 85%. That may not sound like a foot-stomping buy, but consider this: To pocket 7.3% from a taxable bond, you'd have to get a pretax yield of 10.1%, assuming a 28% federal tax rate. For those 3.5 million Americans who pay the maximum 33% rate, the required taxable-equivalent yield is 10.9%. Only junk bonds offer such high yields in the taxable kingdom.

Many muni holders achieve even greater returns by buying bonds that are exempt from state and local taxes, as well as from Uncle Sam's take. All states allow residents to hold local muni bonds without paying state taxes on them. While most states exempt only their own issues, Indiana, New Mexico, and Utah extend the break to all munis, no matter where they come from. In Texas and Florida, investors make out nicely despite the fact that neither state taxes income. Both offer higher yields to give their residents an incentive to invest. Most states have at least a few mutual funds dedicated to native bonds. Since state and local taxes can shave 10% or more from your payout, the list is worth checking out.

In states with many funds, it pays to shop around. For example, the average yield of all 46 New York funds tracked by Lipper Analytical Services is 6.7%. But **Rochester Fund Municipals** has an average 12-month yield of 7.4%, while the **Landmark New York Tax-Free Income Fund** has a yield of only 5.8%. In California the range runs wide as well. The **Franklin California Tax-Free Income Fund** yields 7.4%, while some other state funds pay as little as 6%.

The economic risk of holding bonds concentrated in a single state is not as great as may first appear. Heavy issuers—California, New York, Texas—offer a smorgasbord of different bonds. The mix enables mutual fund managers to get broad diversification. Smaller states like Massachusetts offer less diversity, so cautious investors might consider sticking to a fund that specializes in insured munis, which get an automatic triple-A rating. James Kochan, chief fixed-income strategist at Merrill Lynch, thinks the insured bonds are an especially good buy right now.

New York residents may be reluctant to load up on local bonds because the rating agencies are reviewing the state's general-obligation issues for a potential downgrade. The state has plenty of fiscal problems. As credit analyst Maury Cooper at Standard &

BRIAN LEATART

A California resident would need a taxable bond yielding 10.7% to outdo the 6.7% tax-free yield from a state muni bond fund. Bonds issued to finance the Long Beach harbor landfill will help keep California's muni funds well stocked.

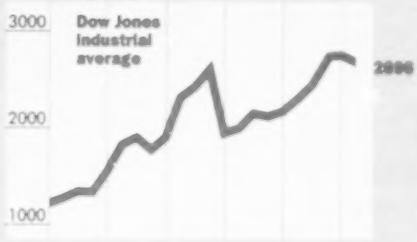
A SAMPLER OF STATE MUNI FUNDS

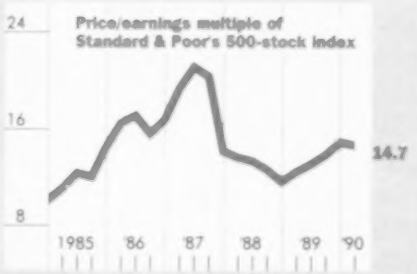
STATE	NUMBER OF FUNDS OFFERED	AVERAGE 12-MONTH YIELD	TAXABLE EQUIVALENT YIELD*	
			Nonresident	State resident
Arizona	5	6.9%	9.6%	10.6%
California	55	6.7%	9.3%	10.7%
Colorado	6	6.9%	9.6%	10.3%
Connecticut	4	6.7%	9.3%	11.6%
Florida	4	7.2%	10.0%	10.0%
Georgia	6	6.5%	9.0%	9.9%
Maryland	7	6.4%	8.9%	9.6%
Massachusetts	18	6.8%	9.4%	11.0%
Michigan	12	6.6%	9.2%	9.8%
Minnesota	17	6.3%	9.2%	10.3%
New Jersey	9	6.3%	9.6%	9.9%
New York	46	6.7%	9.3%	10.4%
North Carolina	4	6.4%	8.9%	9.9%
Ohio	17	6.7%	9.3%	10.3%
Oregon	7	6.2%	8.6%	9.8%
Pennsylvania	13	6.9%	9.6%	9.9%
Texas	4	7.3%	10.1%	10.1%
Virginia	5	6.4%	8.9%	9.7%

*Assumes 28% federal rate and maximum state rate for individuals as of Oct. 1989.

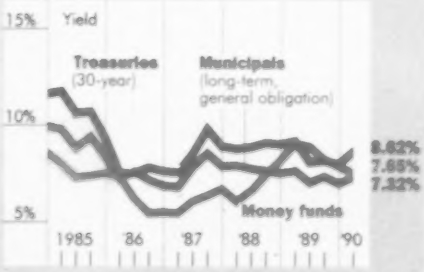
STATE OF THE MARKETS

Stocks

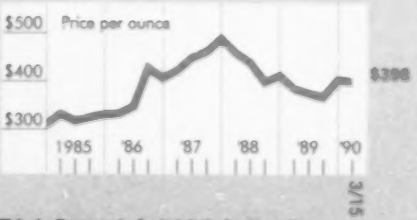




Bonds



Gold



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This is Fortune's fortnightly look at the major markets of the past five years

CHARTS SHOW END-OF-QUARTER FIGURES.

BASED ON EARNINGS FOR THE LATEST FOUR QUARTERS.

SOURCES: STANDARD & POOR'S, BOND BUYER, DONOGHUE'S MONEY FUND REPORT, COMMODITY EXCHANGE

Poor's points out, "New York State cut taxes too far, too fast." But most analysts think investors' fears are overdone. Says John Sebastian, an executive vice president at the Chicago brokerage firm Clayton Brown: "The market has already discounted the possibility of a New York State downgrade, and the idea that New York might default is just absurd."

Ironically, fiscal crisis could well become an investment incentive of sorts, especially for high-income individuals. State legislators are loath to increase taxes, but many are finding they have no choice. Last year, Connecticut, Illinois, and North Dakota raised taxes. In 1990, New York will likely postpone a scheduled cut in its top tax rate, from 7.5% to 7%, and New Jersey's new governor, James Florio, has proposed boosting taxes for the state's wealthiest residents. With more states forecasting revenue shortfalls and more tax hikes likely, more investors will probably seek shelter in municipals.

Mutual funds are not the only route to building a home-state portfolio. Investors can also buy a unit investment trust or purchase bonds individually. The fees and the performance can vary greatly. When you invest in a UIT, you receive a share of the trust, which represents an interest in a defined slate of municipal securities. Trust portfolios, unlike mutual funds, are not actively managed. Investors in a UIT are typically charged an up-front sales commission of 4% to 6%, followed by annual trustee fees, which amount to 0.1%. Mutual funds, on the other hand, usually charge an annual management fee of about 0.5%. Sales charges for mutual funds range from zero to 8.5%.

The canny investor with at least $50,000 can save himself a bundle by buying individual bonds and creating a diversified portfolio free from management expenses of any sort. The best bonds to buy now, say experts, are high-quality (single-A or better) munis maturing in seven to ten years. But be warned: Selling a bond before it matures can incur fees that sharply diminish these savings. Sebastian estimates that transaction expenses related to reselling a $5,000 bond before maturity could run as high as 5% of the face value. If you decide to go it alone, be prepared to love your bonds for a long time.

A LITTLE BUILDER THE BIG BOYS OVERLOOKED

■ It's no secret that engineering and construction stocks are hot. With the nation's infrastructure in disrepair, these companies are promised heady earnings growth in the years ahead. Institutional investors have been plowing their money into such big-name players as Fluor and Foster Wheeler. Since the beginning of 1990, engineering and construction stocks have risen more than 13%, vs. a nearly 17% decline for the S&P 500.

But not all the stocks are breaking new ground. The shares of **Jacobs Engineering Group**, which is based in Pasadena, California, have been left behind. As the price/earnings multiple of competitors ratcheted up, the P/E of Jacobs has remained rather placid at 18 times calendar 1989 earnings.

P/E MULTIPLES OF ENGINEERING/CONSTRUCTION STOCKS

Fluor	29
Stone & Webster	27
Foster Wheeler	25
Morrison Knudsen	19
Jacobs Engineering	18

Reason: With only 5.4 million shares outstanding and only half of those in the float, Jacobs stock has been too illiquid for most institutional investors. But that's changing. With the company's recent move to the Big Board, and a 2-for-1 stock split scheduled for April, trading volume in the stock is expected to improve substantially, and that should draw in big investors.

Although Jacobs's P/E is only slightly below Morrison Knudsen's (see table), it has the potential for far greater profitability. Jacobs concentrates on winning cost-plus contracts, analysts point out, while Morrison Knudsen's work is dominated by riskier government construction contracts—like prisons or Army housing—which must be billed at a fixed price.

Designing and constructing petrochemical and pharmaceutical plants makes up over 40% of Jacobs's $794 million of revenues. Though this part of the business went through a long slump in the mid-

THE NEW DRIVE TO REVIVE GM

Roger Smith's successor will inherit lots of talent and other formidable assets. But the job ahead is to lift profits, win back old customers, and woo young buyers. ■ *by Alex Taylor III*

On sale now: The Chevrolet Caprice Classic has a new flair.

SOMETIME in the next few weeks, the 18 members of General Motors' board of directors will elect a chairman and chief executive to succeed Roger Smith when he retires August 1. The new man will face one of the most formidable challenges in corporate America: revitalizing the core business of the world's largest industrial corporation. GM concedes that its vast North American auto operations have barely broken even for three years, with profits on trucks offset by big losses on cars. The company must be trimmed down to run economically, reorganized to function effectively, and redirected to attract new customers.

After nine years as CEO, Smith, 64, still has a firm grip on the wheel. In recent weeks he has reminded audiences that GM remains the biggest automaker on the globe. He says the company's competitiveness is at an all-time high and predicts that its U.S. market share will reach 37% this year for the first time since 1986.

GM does have remarkable strengths. It sells six brands of cars through five divisions; a sixth division, Saturn, will begin selling GM's new small cars in the fall. Its plants use the most modern machinery of the Big Three, and the company has launched more redesigned models since 1987 than Ford and Chrysler combined. Its technical and research skills and its cadre of experienced executives are unmatched anywhere in the world.

But GM's North American auto operations, which include Canada and Mexico, misfired in the 1980s (see charts). Ford and Chrysler lately have slipped too. At Ford, new CEO Red Poling is struggling to discipline new-model development programs that are behind schedule and over budget. And Chrysler, facing fresh competition for its best-selling minivans and Jeep Cherokees, ultimately may be forced into a merger with a Japanese or European partner. GM, however, is the biggest of the Big Three, and its slide has been deepest and longest.

Robert Stempel, 56: the man who could be CEO

The company sells nearly one-third fewer cars now than it did in 1979—and analysts say that in North America it lost close to $1 billion on them last year alone. GM is Detroit's high-cost producer; model for model, on average, its cars each cost $200 to $300 more to build than Ford's and $750 more than Japanese models made in the U.S., according to Ronald Glantz, a well-regarded auto analyst at Dean Witter in San Francisco.

Nearly all the market share gains made by the Japanese during the last decade have come at GM's expense. *Ward's Automotive Reports*, which publishes the industry's most relied upon statistics, says GM lost 11.6 points—from 46.3 in 1979 to 34.7 at the end of last year—while the Japanese gained 10.4 points. Ford picked up nearly two points, to 22, and Chrysler lost almost three, to 10.3. (By its own reckoning, GM has 35.1% of U.S. car sales. That's because in calculating the total size of the market, it excludes 115,000 Japanese vans and sport utility vehicles that *Ward's* counts as cars.)

GM's new CEO will have to act fast to slow the damage and regain momentum. It is acknowledged within the company that unused factory capacity amounting to one million cars must be written off—and the plants closed—at a one-time cost of more than $1 billion. GM's huge white-collar bureaucracy must be substantially reduced to get costs down and efficiency up. And negotiations will have already begun with the United Auto Workers, whose three-year contract expires September 14.

As usual, the bargaining promises to be difficult. Over the past three years, the UAW says, the average GM hourly employee has received a total of $304 in profit sharing, vs. $7,900 for Ford workers. Among other grievances, the auto workers contend that GM has broken its word by indefinitely laying off workers at three plants without putting the workers into a job bank, where they receive full pay and benefits. GM says the issue is in arbitration.

No one—not even its competitors—can take any pleasure in the plight of General Motors. It is a global institution—a huge employer and buyer from countless suppliers, an enormous force in the world economy and in the many communities in which it operates. What's bad for General Motors is bad for the U.S. If it can return its North American car operations to competitiveness, GM will serve as an inspiration and example to other U.S. companies.

THE QUALITY of GM cars has already gotten dramatically better. That is evident from data compiled by James E. Harbour, a Michigan manufacturing consultant for automakers and suppliers worldwide. In 1980, says Harbour, GM had an average of 740 defects per 100 cars, second worst in the industry after Chrysler with 810 per 100. (Defects are problems that customers notice, such as poorly fitted body panels, squeaks and rattles, and broken parts.) By 1989 the number had fallen to 168 per 100, though GM still lags behind Japanese manufacturers, which have an average of 121 defects per 100 cars, and Ford, which has 149.

Over the next two or three years, GM will also break new ground in styling. On a recent tour of the company's design studio, Chuck Jordan, the Hollywood-handsome vice president of design, whisked the dust covers off nearly a dozen new cars parked in the hallways. Jordan's team has created an imposing new look for the 1992 Cadillac Eldorado and Seville that is as grand and distinctive as any of GM's luxury classics of the 1950s. And it redesigned the slow-selling Chevy Lumina and Pontiac Grand Prix for 1993 and 1993½ with a futuristic cab-forward look that some

Due in 1992: a compact Buick similar to this Bolero show car

PETER UBBARD

PHOTOGRAPH BY WILLIAM COUPON

analysts believe could catapult GM to the leading edge of automotive design.

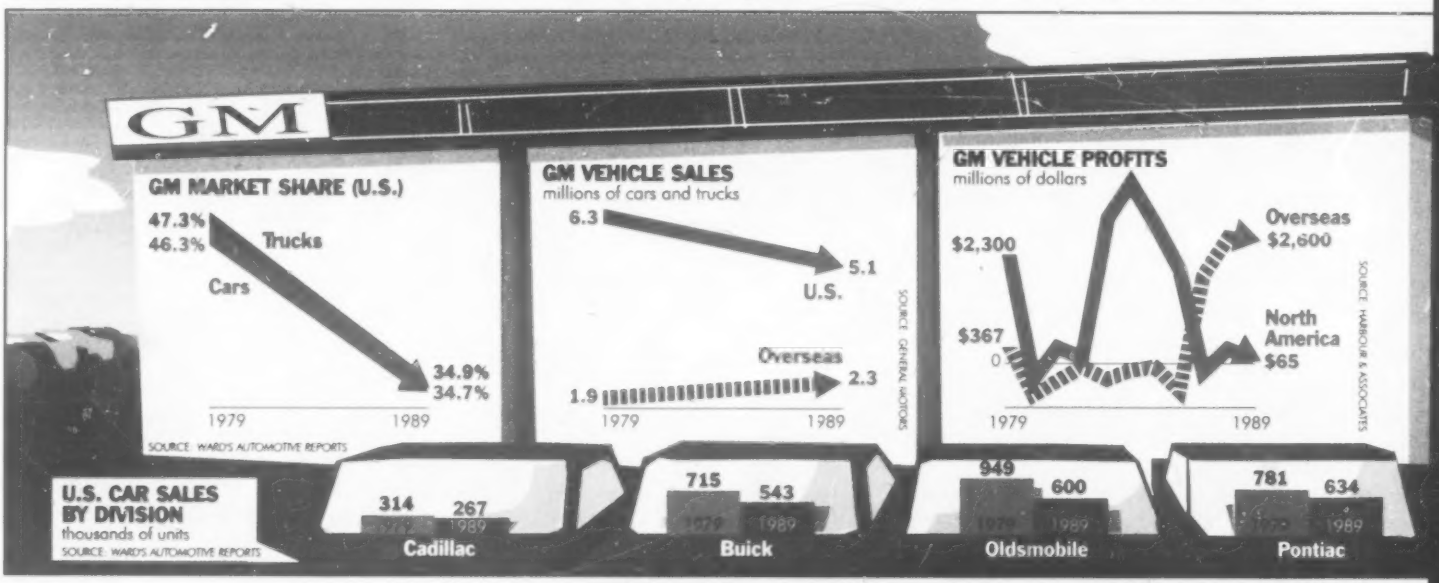
Except for its flagship U.S. car business, GM is thriving. Trucks earned more than $1 billion last year. GMAC, the finance group, contributed another $1.1 billion, and Ross Perot's old Electronic Data Systems kicked in a record $423 million. GM's overseas car operation is healthiest of all; it made $2.6 billion last year, mostly in Europe. Altogether, earnings were $4.2 billion, giving GM its third most profitable year ever.

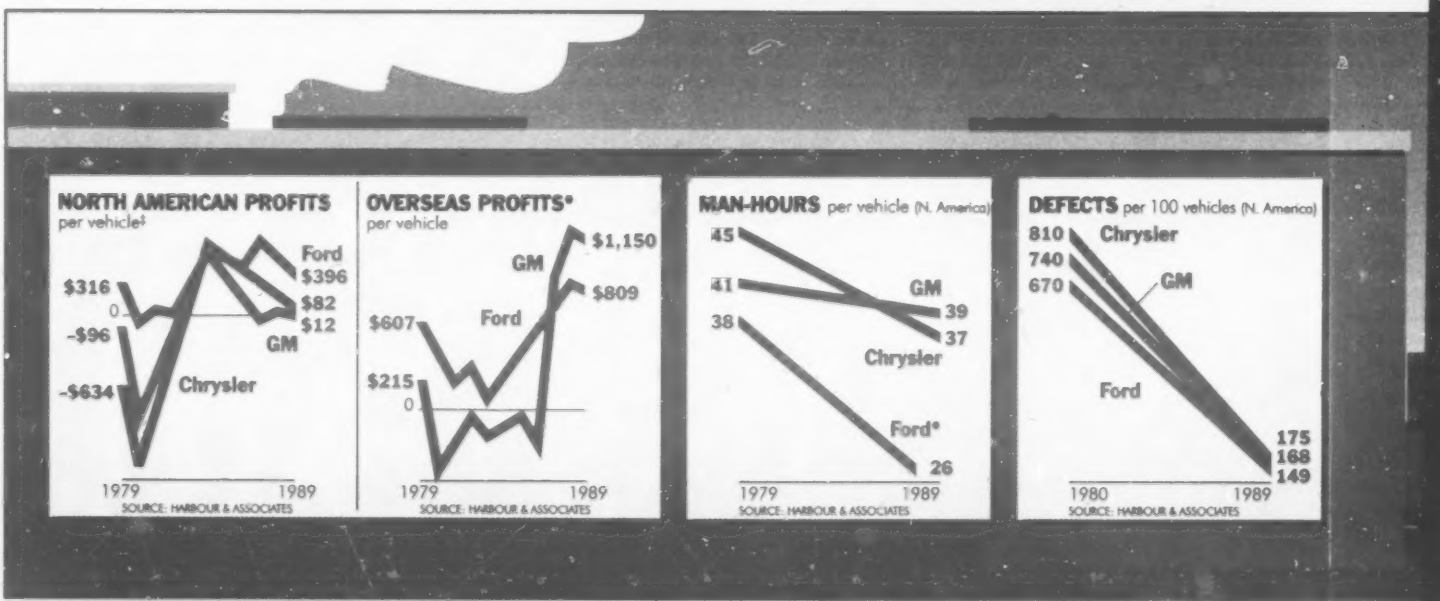
As recently as 1986, GM Europe was a money loser. But after it went through a vigorous cost cutting and developed some snappy new models, the market turned hot and cash started gushing. Unfortunately its success cannot be easily exported. GM Europe sells 60% fewer cars than the North American operation and markets them under just two brands, Opel and Vauxhall. Because it is less vertically integrated, it can buy more parts at competitive prices from outside suppliers. Managers operate with more autonomy than their American peers. And competition isn't as stiff. The Japanese account for only about 11% of European car sales, vs. nearly 26% in the U.S.

Fairly or not, Roger Smith has become a lightning rod for criticism about GM. Smith insists that his changes will ultimately pay off for the company. As he told FORTUNE a year ago, "Please come back in five years and see what I did." But many GM executives want to move faster to shake up the car operations, and they are eagerly awaiting the arrival of the new CEO and his team.

THE WORLD OF GM

In so vast an enterprise, getting all the components moving in the same direction is a major achievement. Since 1979, GM has made big strides overseas. In North America quality is up, but factory gains are scant, and profits and market share are persistent problems.





‡Vehicles in each case include cars and trucks. *Chrysler has no overseas operations. *1988 figure.

There is even some admiration for Ford Motor, where CEO Donald Petersen recently retired early, enabling his successor to forge ahead. Says a consultant who works closely with GM: "I don't know how many GM vice presidents have told me they can't make big changes until Roger leaves."

Some of the company's institutional investors are frustrated. In January, New York State controller Edward Regan, a trustee of pension funds holding over 5.1 million GM shares, wrote to the board of directors noting that GM's stock had markedly underperformed the S&P 500 over the past decade (GM's stock rose 69%, vs. 227% for the S&P 500). Concluded Regan: "We are very desirous of better performance from one of our most major holdings." California controller Gray Davis, a board member of the state employees' pension fund who is also co-chairman of a group of about 60 large pension funds, urges the board to cast widely for Smith's successor. "The company needs new leadership, and it's the outside directors' obligation to mount a worldwide search for it," says Davis. "Tradition is not the answer; it's the problem."

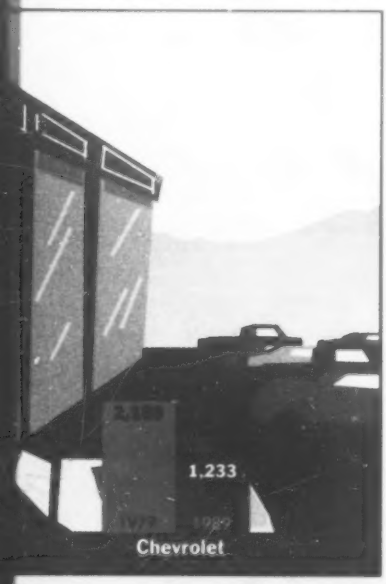
Members of the GM board have pledged not to talk about the CEO selection process, but there are no signs they plan to recruit an outsider. Anne Armstrong, the former ambassador to Britain who is a 13-year GM director and a member of the nominating committee, said in a brief telephone conversation: "We have discussed the possibility of looking at outside candidates. I'm not going to go any further than that."

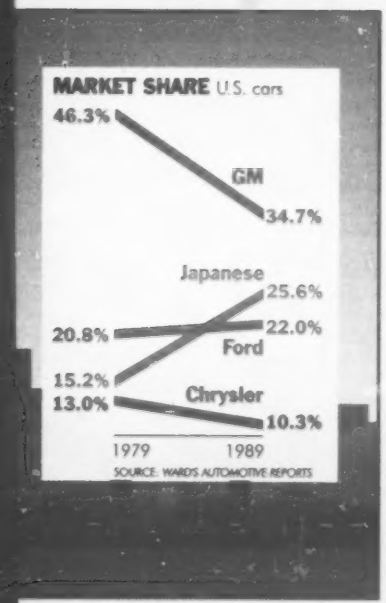
SMITH'S all-but-certain successor appears to be President Robert C. Stempel, 56, who rose through the ranks from transmission design engineer. After 32 years at GM, the indefatigable Stempel knows the car business "from the road to the roof," to use a favorite phrase of his. As the first career engineer to run the company, he would end GM's domination by its financial staff. Under Stempel the company could be expected to concentrate at first more on products than on short-term profits. That would be popular within GM and, surprisingly, on Wall Street, where analysts and large investors view Stempel much the same way they do Petersen—a car enthusiast who rebuilt Ford's product line and guided it to record profits.

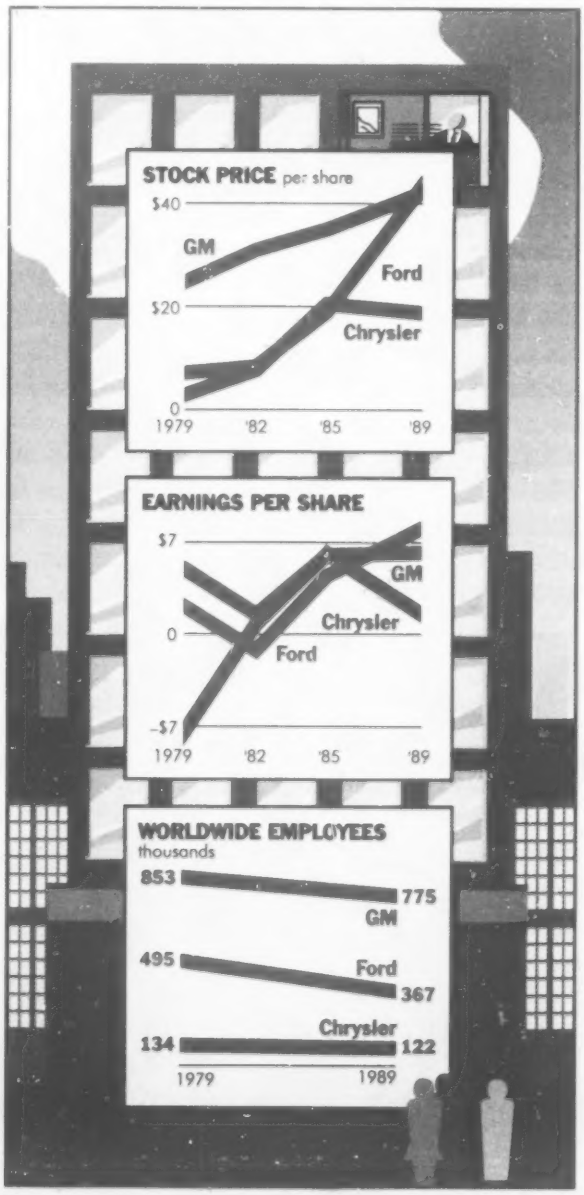
Stempel is a reformer, not a revolutionary. During his 2½ years as president, he has been the ideal second-in-command. In January he flew 1,500 miles from a dealers' convention in Las Vegas to Chicago, where he listened to Smith give a 30-minute speech, then returned to Las Vegas that afternoon. If Stempel has any radical plans for GM, he is keeping them private. Says he: "We made our decision to go with a long-term view, and it's paying off overseas, in trucks, and in our acquisitions. We just have to stay the course in North America."

Like Smith, Stempel is sensitive to criticism and is known to study problems at length before reaching a decision. Also like his boss, he is confident the company is on an upswing. He told FORTUNE that GM will operate at 100% capacity by 1992, vs. 76% in 1989 (Ford ran at 97% capacity last year), regain 40% of U.S. car sales by 1994, and make Saturn profitable by 1995.

The son of a New Jersey banker, Stempel played football at Worcester Polytechnic Institute in Massachusetts and got an MBA at night from Michigan State. At GM he "moved through the chairs" with unusual speed, winning 11 promotions during one 18-year stretch. As head of Opel in Europe in the early 1980s, he began the consolidation of GM's car operations that finally paid off in record profits last year. No buttoned-







REPORTER ASSOCIATES *Jung Ah Pak and Rosalind Klein Berlin*

ILLUSTRATIONS BY JIM MCMANUS

down executive in either style or demeanor, Stempel favors black jodhpur boots and poker chip–size gold cuff links bearing his astrological sign: Cancer.

SEVERAL OTHER GM executives are poised for promotion. Depending on how the new titles are parceled out, their elevation could signal a greater sharing of responsibility among the company's top officers than during Smith's term. One candidate is executive vice president William Hoglund, 55, a lanky, likable Princeton graduate. He helped rejuvenate Pontiac in the early 1980s and then Cadillac in the late 1980s after succeeding Stempel as head of the Buick-Oldsmobile-Cadillac group.

Another man who seems likely to move up is executive vice president John F. "Jack" Smith, 52 (no relation to Roger Smith or to another executive vice president, Alan Smith). The quiet, efficient Smith returned to Detroit last year after a highly successful term running GM Europe, where he launched several popular new models. Smith and Hoglund both started in finance but have won strong credentials as operating executives.

As described by the legendary Alfred P. Sloan, GM's mission is "to cut metal and in so doing add value to it." Historically, economies of scale have paid off big in the auto business, and nobody is bigger than GM, with its 755,000 employees, more than 200 plants and other facilities worldwide, and annual sales of $127 billion. But as more competitors have sprung up and GM's market share has shrunk, its avoirdupois has become a drag instead of a lever.

Satisfied owners who remain loyal for a lifetime generate a revenue stream for 40 years or more.

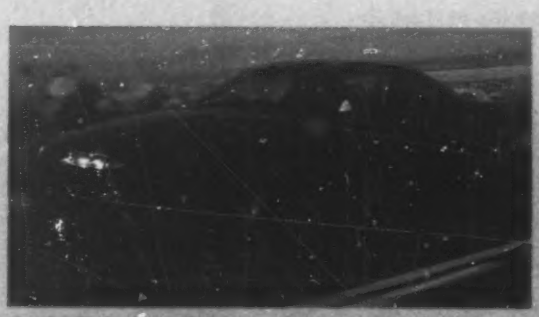
The most telling indication is contained in a profitability analysis of GM's North American car and truck operations given to FORTUNE by a former GM employee. According to him, the analysis was prepared by GM's corporate finance staff. A GM spokesman refused to confirm or deny the document's authenticity.

Analyzing any company's internal financial reports is difficult without knowing the assumptions and accounting principles behind them. GM's methods are more complicated than most because the prices charged by the company's in-house suppliers can inflate the booked costs of the cars. Moreover, budgets can be used for internal strategic or economic purposes that distort the final results. But two knowledgeable security analysts who independently were given copies of the document say it is genuine and presents an accurate picture of GM's U.S. car business. And when asked about some of the forecasts, four high GM executives did not dispute the data.

Dated December 5, 1988, the report projected sales for every car in the GM line for the 1989 model year, which ended September 30. It estimated GM's variable profit, based on direct manufacturing costs, and the company's operating profit—what is left over after capital costs, overhead, merchandising expenses, and sales rebates are deducted. The analysis actually understated GM's losses, because 1989 production ran 10% below projections and cash rebates averaged about $1,000 per car, higher than anticipated. GM says it paid $5 billion in rebates in all

SOME OF GM'S MONEY LOSERS . . .

According to a report two security analysts have seen, the four cars shown on this page were budgeted to lose money in the 1989 model year, while the two cars on the facing page were projected to be big moneymakers. The Grand Prix and the Cutlass Calais suffer from production inefficiencies. The Allanté and Reatta are luxury two-seaters that have not sold as well as GM had hoped. The Brougham and Touring Sedan are profitable because their costs have been amortized and they command a high markup. The pictured cars are 1990 models.



Pontiac Turbo Grand Prix: average sticker price, $25,500

Oldsmobile Cutlass Calais Quad 442: $13,700

Cadillac Allanté: $52,500

Buick Reatta: $26,700

of 1989, up from $4.2 billion in 1988.

Manufacturing and security analysts with whom the document has been discussed say the projections highlight GM's excessive overhead and inefficient plants. The company's biggest losses are coming from its newest cars: the midsize coupes and sedans of the GM-10 line, such as the Buick Regal and Pontiac Grand Prix. They were introduced in the 1988 model year as a belated attempt to compete with the Ford Thunderbird and Taurus. The cars have been a major disappointment, and company officials concede that their four GM-10 plants run at only 60% capacity. GM, for example, budgeted a loss of $1,697 on the Grand Prix. When startup costs for the Chevrolet Lumina were added in, the budgeted operating loss of the GM-10 line came to $2,117 per car in the 1989 model year. According to the document, the company figured to lose $1 billion on the GM-10s. Says a well-informed Detroit automotive consultant, who often develops similar cost analyses on his own: "These numbers are not surprising. They provide a good representation of the financial challenge in front of GM."

Unused plant capacity also made losers of the Buick Riviera, Oldsmobile Toronado, and Cadillac Eldorado. GM spends only $4,000 more building a $29,900 Eldorado than it does a sporty $14,100 Pontiac Firebird. But the trouble-plagued Hamtramck plant where the luxury cars are assembled runs on only one shift because of slow sales. So, according to the analysis, GM estimated it would lose $1,250 on each in the 1989 model year. Two low-volume, expensive two-seaters designed as "image cars" were particularly costly. Budgeted operating losses on the $52,500 Cadillac Allanté approached $8,000 per car. And GM figured to lose about $17,000 on every $26,700 Buick Reatta.

Says Stempel: "I do not plan to get rid of any divisions, and, no, we do not plan to merge any of them."

GM continues to make strong profits on light trucks and several older lines of more traditional big cars: the Oldsmobile 98, including the Touring Sedan, and similar Buicks and Cadillacs. They were budgeted to produce average operating profits of $3,685 each in model year 1989. The plants where they are built operate closer to capacity, and the tooling, which is amortized over four years, is paid for. The same is true for the gargantuan $29,300 Cadillac Brougham, built with vintage body-and-frame construction. The document said it would generate a $5,257 operating profit per car.

Heavy rebates made profits scarce for both American *and* Japanese automakers in 1989, and that trend has carried over into 1990. The car companies have had a particularly tough time earning money on small cars because of intense price competition. Ford concedes that its subcompacts, such as the new Escort, lose money and that its compact Tempo and Topaz are only marginally profitable. GM has never acknowledged losing money on any model. But the internal document shows that it budgeted losses on all three of its small-car lines in model year 1989. The biggest losses—$522 per car—came on a line of older cars that includes such models as the Pontiac Grand Am and Buick Skylark.

Even with its hefty margins on trucks, GM's profitability is declining more than its competitors' because it is losing so much on cars. A study by Harbour & Associates, James Harbour's consulting firm, shows that Ford's earnings on cars and trucks peaked at $706 a vehicle in 1987 before falling to $396 last year. GM's profitability per vehicle in North America reached a high of $588 in 1984 and has been headed downhill since, reaching $12 last year. Overseas the direction has been exactly the reverse: GM made $215 per vehicle in 1979—and $1,150 in 1989.

At home GM's sinking car sales are eroding its base of loyal customers, with potentially costly long-term consequences. Satisfied owners are the best source of future sales and those who remain loyal for a lifetime generate a revenue stream for 40 years or more. Says Stempel: "A guy who has bought anywhere from 15 to 25 vehicles over his lifetime is a great contributor to our bottom line. We lost some in the 1980s."

Ordinarily GM could expect to replenish its owner base with aging baby-boomers. But according to a 1989 survey of 35,000 car owners across the U.S. by J.D. Power & Associates, the highly regarded California research firm, customers under 45 prefer Japanese cars almost 2 to 1 over GM cars. Ford fares somewhat better, Chrysler a little worse. Says Christopher Cedergren, senior analyst at J.D. Power: "The baby-boom and baby-bust generations buy 55% of all new cars, and they rarely shop GM products." GM recently completed a confidential study called Adopt/Retain to determine whether the baby-boomers are likely to retain a preference for Japanese cars for years to come or whether, as they age, they will adopt their parents' habit of buying GM cars. Among the findings: Older buyers do like the company's big, roomy cars.

FOR NOW, market analysts expect GM's sales to keep sliding. DRI/McGraw Hill sees the company's share sinking to a low of 31.5% in 1993—despite the addition of 240,000 Saturn sales—and then recovering somewhat to 32.1% in 1994 as new designs catch on. Analysts at J.D. Power posit two scenarios. In the most optimistic, Ford goes into reverse, the Japanese stall, and GM accelerates to 40% of the market. Stempel says that's his goal, and a couple of hot

. . . AND MONEYMAKERS

Cadillac Brougham: $29,300

Oldsmobile Touring Sedan: $26,200

models could put the company close.

But instead of pushing all out for a blockbuster, GM has temporarily stopped work on some new models to save money in the first half of 1990. Power's Cedergren thinks GM's goal is "far-fetched." A more likely outcome, he says, is that the Japanese keep growing, Ford holds on to its 22% share, and GM dips to 29% by 1995. In this scenario, after projecting sales for every model in GM's lineup, Power determined that Oldsmobile and Buick combined could be selling only 770,000 cars in 1995, down from more than 1.1 million last year. That would make it tough to support the current network of 6,000 Oldsmobile and Buick dealerships, though Stempel insists, "I do not plan to get rid of any divisions, and, no, we do not plan to merge any of them."

During the 1980s GM spent $77 billion on modernized plants, automated equipment, and new models. Yet a 1990 report by Harbour & Associates says GM reaped only minor improvements in productivity. The report was compiled after a year-long analysis of publicly available data from the Big Three and their foreign competitors; it was published as a sequel to a similar report by the firm in 1979. Since Jim Harbour did not have access to internal company reports, he could not account for such factors as overtime or absenteeism. While he cautions that his statistics are approximations, nobody, including GM, has disputed his overall analysis.

Harbour says GM's car and truck assembly efficiency improved only 5% during the 1980s, vs. 31% at Ford. In 1989 it took 39 hours to build a vehicle at GM's plants, vs. 37 hours at Chrysler's and 26 at Ford's. Productivity at the recently modernized factory in Doraville, Georgia, that assembles the midsize Oldsmobile Cutlass Supreme has fallen 6% since 1979, according to Harbour, partly because the plant is running well below capacity. Doraville requires twice as many workers per car as Ford's comparable midsize-car plants.

GM invested several billion dollars during the 1980s on high-tech press lines that stamp out sheet metal body parts. Yet Harbour says GM's stamping productivity improved only 14%, while Ford, which spent a fraction as much, got a 45% boost. He says GM designers were unable to create new car models that capitalized on the presses' capabilities. GM responds that productivity at Ford plants appears higher because employees work more overtime.

Since 1984, GM has committed more than $2 billion to train and educate its employees. Even so, it admits that it underestimated the skills needed to use the sophisticated new equipment. The inefficiencies that followed, combined with falling sales, hurt GM's productivity and its cost structure. Concludes Harbour: "If GM were as efficient as Ford, it would require 60,000 fewer workers [GM had 419,000 employees in the U.S. in 1988], and it would gain $3.3 billion in annual pretax profit."

THE MOST TROUBLESOME element in GM's overhead remains its army of 100,000 white-collar workers in North America. "GMers look at the way they do business as a sacred cow and don't realize that they aren't functioning internally," says an outside management consultant who does work there. "More time is spent on meetings than anyplace I've ever seen, but less is accomplished."

GM has cut 40,000 people in four years from its white-collar work force. Yet, says David Cole, director of the Office for the Study of Automotive Transportation at the University of Michigan, "GM still has overhead coming out its ears." Stempel acknowledges that more cuts are necessary but says they won't be drastic. Eugene Jennings, a professor emeritus at Michigan

THIS MAN KNOWS WHAT A CHEVY IS

GM President Robert Stempel can parse a suspension with as much zest as he can a ten-day sales report. He spoke with Alex Taylor III about GM's future.

On thinning management:

We need to delayer the organization and restructure to eliminate redundancies. In our plants we've had seven layers from the plant floor to the manager, and in some plants we are now down to four. We're looking at our staff operations to see if they are duplicating our operating activities. Blending them will take out some people. In the case of our engine plants, we're looking at bringing the engineering staff functions in with the operating guys. If it is better in the personnel area to have a central personnel function serving five or six plants as opposed to each one having its own, then we will probably centralize that.

On cutting manufacturing costs:

After we converted to front-wheel drive in our small-car lines, lo and behold, we wound up with 14 or 15 different kinds of drive shafts, a half-dozen rear suspensions, and so on. Now it's time to say, "Okay, guys, among that array of components, which ones are best for what we're trying to do?" Drive shafts on one particular car line will come down from over a dozen to two. That's where the economies of scale start to go up.

On Saturn:

Saturn is intended to be a profitable small car built in North America. We've said that for years. We're on track to do it. We are committed to building small cars for profit in this country. If you can't, it's only a matter of time before you can't do it for midsize cars, you can't do it for full-size cars.

On federal emission requirements:

We told the Bush Administration that its standards were probably uncalled for, but we'd try our best to meet them. Well, Congress got hold of them, and they became the opening bid in the poker game. The fact is, no one in the world knows where the technology lies. We're going to have to invent it, and that's going to be very costly because we're not going to take performance or fuel economy away from the customers. I haven't seen one guy buy a car because it's got the cleanest tailpipe.

On selling American cars:

I think every domestic maker has seen a generation of people who don't even know what a Chevrolet, Ford, or Plymouth is, but know very well what a Honda, Toyota, or Nissan is. These people are the ones to whom we simply have to say, "Hey, we've got some good cars of interest to you too." But we've got to build a car that's equal to or better than [Japan's] in features, shape, size, and appearance.

Lanky, likable William Hoglund, 55, may be promoted soon.

State's business school and a longtime student of GM, makes a downright draconian recommendation: 40,000 to 50,000 white-collar workers ought to be let go immediately, he says, and the organization compressed to remove excess layers of management and redundant functions. Marketing and engineering, for example, are staffed at the corporate, group, and division levels.

More and more it is apparent that GM's 1984 reorganization injected Novocain into the system instead of adrenaline. By creating two new car groups to take over the functions of planning, engineering, and manufacturing, GM, in the words of a management consultant who works at the company, "introduced a whole new layer of bureaucracy and further diffused responsibility. People make group decisions: If something fails, everyone takes the blame."

The reorganization is likely to be GM's most ambitious attempt to grasp its historic Golden Fleece: leveraging its enormous scale. By centralizing engineering and manufacturing in two car groups, it believed that it could eliminate some unique models and build a few basic designs that each division could tailor for its own customers.

BUT GM was already huge. Before the reorganization, Chevrolet, Pontiac, and Oldsmobile each sold more cars than Chrysler. The reorganization not only made it less nimble but also went against the trend toward smaller-volume, custom-tailored models. Says a high-ranking executive at a Big Three competitor: "We were all brought up to believe in economies of scale, but the days of pumping out 300,000 versions of a single car are gone."

GM's product development system still fails to allow the separate car divisions to sufficiently differentiate themselves. All models are styled by GM's central design staff, a fiefdom of its own that reports up through two layers to the chairman of the board without going through any car executive. Division heads must negotiate with the design staff on styling for the cars they sell. "Not all of them are all that clear on what they want," says design boss Chuck Jordan.

Building cars by committee produces cars only a committee can love. Since the reorganization, GM has not had a single smash hit like the Ford Taurus or Honda Accord. *Consumer Reports* recently rated Chevrolet's newest car, the Lumina, beneath Ford's five-year-old Taurus in design and performance. And the American Automobile Association's automotive engineers were quoted in an AAA newsletter saying the Lumina "easily improves on the nine-year-old Celebrity but still lacks features on competing cars. Lumina, although new, still feels old." That is not a surprise since, according to Jordan, the Lumina was originally designed as a 1982 model. It was delayed, incredibly, for seven years because of development problems and disarray from the reorganization.

The new system presses tightest on GM's three divisions in the middle of the market that already had the greatest tendency to overlap: Buick, Olds, and Pontiac. Some 80% of their cars vary only slightly in price and engineering. The styling and image, though different, is not sufficiently distinctive to keep sales from falling. Buick's dropped 7% in 1989, Pontiac's 12%, and Oldsmobile has gone from selling 1.1 million cars in 1984 to just 600,000 in 1989.

Ask an Olds executive what makes his cars different from Buicks or Pontiacs, and he will hand you a laminated three-by-five card with the "Oldsmobile mission statement" on it. To jump-start sales, GM gave Olds a minivan and a four-wheel-drive sport utility vehicle to sell, but even those were originally designed for other divisions. Some Olds dealers are so angry about their declining fortunes that they stormed out of a meeting with general manager Michael Losh at Las Vegas in February after he refused to authorize factory rebates to dealers for the new Olds minivan.

While GM executives continue to praise the reorganization in public, bits and pieces keep coming undone. When Cadillac's unique identity started to blur under the pressure of corporate homogenization, the company agreed to give its most prestigious—and profitable—division its own engineering team. Cadillac embarked on an expedited project to make its cars longer and heavier, and *Ward's* says it was the only GM division that did not lose sales last year.

So may John Smith, 52, who led GM Europe to record profits.

Analyst Maryann Keller, a managing director of Furman Selz Mager Dietz & Birney and GM's most authoritative and vocal critic, has long argued that GM can return to glory only if it gives the same kind of autonomy to its other car divisions as it did to Cadillac. No fan of Keller's, Stempel refuses to consider the idea. Says he: "One reorganization is enough for anyone's lifetime." His strategy is to continue to differentiate models through design and extra features—which the customer can see—while cutting costs under the sheet metal by using more common parts.

Seventy years ago GM went through a similar crisis. When Alfred Sloan was confronted with seven overlapping brands in the 1920s, he jettisoned three money losers—the now forgotten Oakland, Scripps-Booth, and Sheridan lines—and imposed strict price segmentation on the rest. The strategy worked for half a century.

Sloan, of course, never had to cope with the Japanese, and Ford was still in the hands of its eccentric founder. But he set a good example. GM urgently needs to slim down, focus its resources, and sharpen its aim. While it lumbered through the 1980s preoccupied with its own concerns, the world changed. Soon, with new leadership, GM will have a chance to change with it. F

INVESTOR'S SNAPSHOT

GENERAL MOTORS

SALES (latest four quarters)	**$126.9 BILLION**
CHANGE FROM YEAR EARLIER	UP 2.7%
NET PROFIT	**$4.2 BILLION**
CHANGE	DOWN 13%
RETURN ON COMMON STOCKHOLDERS' EQUITY	**12.1%**
FIVE-YEAR AVERAGE	11.9%
STOCK PRICE RANGE (last 12 months)	**$39.125-$50.50***
RECENT SHARE PRICE	**$46.25**
PRICE/EARNINGS MULTIPLE	**7**
TOTAL RETURN TO INVESTORS (12 months to 3/9)	**16%*†**

*Adjusted for 2-for-1 stock split paid out 3/31/89.
†Does not include Class E and Class H stock.

THE COMING WORLD LABOR SHORTAGE

A baby bust will soon shake industrialized economies everywhere. To cope, they must start encouraging immigration and discouraging early retirement. ■ *by Louis S. Richman*

AGE HEALTHFULLY, retire earlier, and bank on ever richer government benefits. For nearly 50 years, political leaders in North America, Japan, and Europe have promised their citizens varying versions of that bright future. But as the next millennium approaches, it's looking less and less likely that those promises will be kept. The problem: too few workers and too many retirees.

During the building of their postwar welfare systems in the 1950s and 1960s, countries everywhere could count on rising numbers of young workers to enter the labor force and carry the cost of state-sponsored pension and health insurance programs. But beginning in the late 1960s, America's baby boom, and the corresponding boomlet in Western Europe, turned rapidly into baby busts. Since the early 1970s, birthrates in almost every industrialized nation have dropped below the 2.1 offspring that women of childbearing age must produce, on average, for a country to replace its population.

As a result, a demographic San Andreas fault now runs beneath the economies of the West. Will it cause an earthquake? Yes, most likely a big one. Says R. Scott Fosler, vice president of the Committee for Economic Development, a business-backed public policy research group: "Population pressures are as strong as they are inevitable. And the population pressures we face today are without precedent in human history."

The first gentle tremors have already begun. Barring an immediate and sustained upswing in birthrates—a most unlikely prospect—they will strike with gathering force after the turn of the century. Among the consequences:

■ **Companies will grow increasingly desperate for young workers.** Recently, Japan's Ministry of Labor surveyed 268 companies and found that they were already unable to recruit even a quarter of the new workers they would like. Over the coming decade, the

REPORTER ASSOCIATE *Constance A. Gustke*

These retirees are dancing at a "strawberry festival" in Florida. By the early 21st century, the U.S. will be straining to carry far too many old folks . . .

number of new job seekers under age 25 will decrease 3.6% a year in West Germany and about 2% in Britain, France, and Japan. The result: Work forces in Europe and Japan will actually contract. In the U.S., the native-born labor force will still grow, but at the slowest rate since the 1930s—less than 1% a year.

. . . with too few of these—high school kids in Oakland, California.

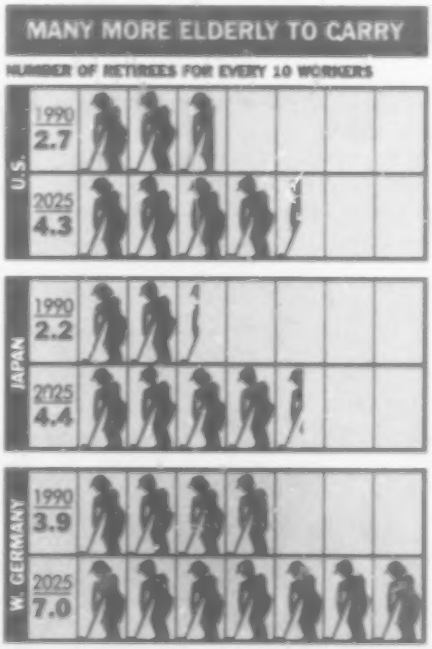
■ Societies everywhere will get a lot grayer. By 2030, people over 65 could account for 22% of the populations of the seven biggest Western economies, up from just 12.5% in 1980. And aided by advances in medical technology, the ranks of the older old—those living beyond 75—are rising even more swiftly. They now constitute the fastest-growing population segment in almost every major industrialized country. Unless the trend toward earlier retirement is reversed, many folks will spend more years as retirees than as workers.

■ The cost of supporting the old will grow nearly unbearable. By 2025 what economists call the dependency ratio—the proportion of pensioners 60 or older to all workers—will have roughly doubled in Japan, the U.S., and West Germany (see chart). If the present benefit systems are kept in place, U.S. programs for the elderly could consume 50% of the federal budget by then. In Italy government spending on pensions is projected to rise fivefold over the same period, even after adjusting for inflation. If the system isn't to collapse, payroll taxes will have to keep pace. (Italy, you will recall, is the birthplace of Signore Ponzi, whose get-rich scheme also required a constantly expanding inflow of newcomers to let older investors cash out.)

■ Immigrants will bang on the doors of the developed world as never before. The baby bust hasn't hit the Third World yet. Over the next 20 years the working-age population in developing countries will rise by roughly 700 million—just about equal to the *total* current population of North America, Japan, and Western Europe. Unskilled workers in the rich nations can expect that growth to exert powerful downward pressure on their wages. Says John Sewell, president of the Overseas Development Council, a Washington, D.C., think tank: "The work-hungry multitudes of the Third World will either descend on the developed economies in a flood of migration, compete with increasing success for the low-skilled and semiskilled jobs that will migrate to them, or most likely, do both."

None of these are issues that parliamentary democracies find easy to tackle. Says Paul Johnson, an economic historian at the London School of Economics: "Because population trends never affect politicians before the next election, they reinforce governments' tendencies toward long-term irresponsibility."

Nevertheless, their common demographic problem will eventually force the U.S., Japan, and Western Europe to focus on three options. They should find ways to expand their domestic work forces and encourage more immigration. They should boost productivity so that their economies can better carry the burden of more elderly dependents. And they should rethink public pension and health care policies. Herewith an account of the particular challenges each society will face in the years ahead—and how each will probably respond.



Divide the nonworking elderly over age 60 by the total work force and you get what economists call a dependency ratio. Another name for it: trouble.

JAPAN

Nowhere will the shocks hit harder or earlier. Japan's elderly population is growing at nearly twice the West German rate and six times that of the U.S. By century's end, what had been the world's youngest industrial society 20 years earlier will have become the world's oldest. A recent report by the Japan Federation of Employers calls this "the most difficult problem facing Japanese companies."

One likely casualty: those companies' longstanding reliance on rigid promotion and pay systems based on seniority. To attract the young, Japanese business may be forced to shrink the wide gap that now exists between the salaries of recruits and older workers and to promote newcomers faster. Another casualty will be Japan's vaunted savings rate. One reason the Japanese are such savers is that no other developed economy expects its old folks to finance so much of their retirement. Employer-paid pensions are skimpy—usually a lump-sum payment equal to just over three years' salary. Government benefits are relatively meager too. But as more workers retire and begin drawing on the money they have set aside, many forecasters predict that Japan's savings rate could fall 50% by the early 21st century.

Compared with their American and European peers, a far higher proportion of Japan's elderly stay in the work force. Over a third of all men and 16% of all women over age 65 are employed, mostly in low-skilled, part-time jobs. But they could be put to more productive use elsewhere. Currently more than 75% of them toil in agriculture or in Japan's notoriously inefficient retail distribution system—two sectors that U.S. trade negotiators have flagged as unfairly impenetrable to outsiders.

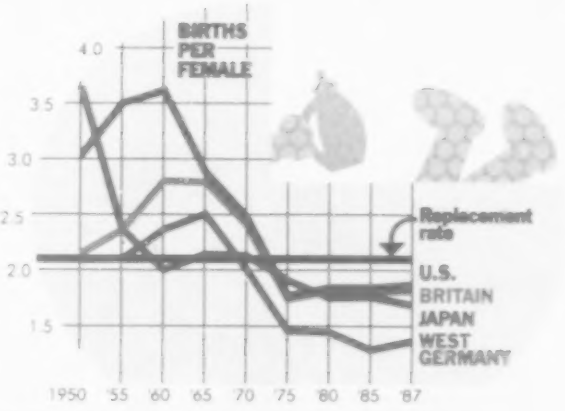
Japanese women are a relatively untapped labor source. But the burden of caring for dependent parents has recently begun to force growing numbers of the

women who do work to quit or take leaves. More than two-thirds of Japan's senior citizens live with their children, vs. a tiny fraction of America's elderly. To make it easier for women to balance jobs with family responsibilities, the government has launched a crash program to build 9,000 new day care centers for the old by the year 2000.

Xenophobia will probably continue to close off this island nation's most promising source of new labor—immigration. Even the employers' association opposes letting in more foreign workers. Of the 80,000 legal migrants to Japan in 1988, 88% were entertainers and sports figures. And the government recently stiffened laws that fine employers who hire illegal immigrants. Some 14,000 illegals were caught, about half of whom were low-skilled construction and factory workers. Most of the remainder were Filipino and Korean domestics, bar hostesses, and prostitutes.

To break their labor bottleneck, Japanese companies are opting instead for heroic increases in capital spending (see The World). By installing advanced automobile manufacturing technology, for example, Toyota hopes to boost car output by at least 30% without adding the 3,000 new workers such an expansion would otherwise require. Though Toyota's new cars are meant to satisfy rising domestic demand, some foreigners worry that Japan Inc.'s collective investment in efficient, expensive robots could aggravate international trade frictions. If growth at home falters, those additions to output could turn into unwelcome new exports.

Still, such tensions should be partially offset by Japan's continued willingness to export jobs as well. The Ministry of International Trade and Industry (MITI) estimates that Japanese direct foreign investment will average 14% annually through the 1990s, with much of that money going to build factories in the developing economies of Southeast Asia. MITI projects that by 2000, employers will have shifted some 800,000 jobs offshore.



HOW THE BABY BOOM WENT BUST

According to demographers, societies shrink when women of childbearing age fail to produce, on average, at least 2.1 offspring.

EUROPE

Because their unemployment rate—nearly 9% by the latest count—remains high compared with those of Japan and the U.S., the Common Market countries are well-cushioned against any immediate labor pinch. But a pinch is coming all the same. In West Germany, the most extreme case, birthrates now average just 1.3 *kinder* for every childbearing woman—a trend that, if continued, would guarantee that country's extinction in the not-so-distant future. Nor is the opening of the border with Eastern Europe the demographic godsend it might seem. Birthrates there, though slightly higher than in the West, are also below replacement levels.

Wrongheaded retirement policies are compounding Europe's long-term labor troubles. Since 1970 work force participation rates among those ages 55 to 64 have fallen more than 20 percentage points on average. Today nearly half of all European men and some two-thirds of all women in this age group are retired. And, unlike Japan and the U.S., which restructured their social security systems in the 1980s to build up trust funds for the eventual retirement of today's workers—even if only with government IOUs—European public pension systems operate hand to mouth. Reserves of the West German pension fund are just two months deep.

The march toward a single European market after 1992 is giving the Old World's economies some much needed flexibility. Manufacturers from the high-wage countries in the north, for example, have been scrambling to open plants in low-wage Spain, where unemployment nonetheless hangs at 16%. But there are limits to what Project 1992 can accomplish. In Europe, as in the rest of the industrialized world, most of the new job growth will be in services. Says Paul Johnson: "Even if all its political frontiers disappear, Europe's language frontiers will remain an obstacle to the export of service jobs."

Eventually European governments will have to dismantle schemes that now encourage their fiftysomething set to chill out prematurely on the Costa del Sol. Put in place in the mid-1970s and early 1980s, when unemployment took off, these plans typically offer workers generous disability and long-term unemployment compensation to tide them over until they reach pensionable age. Almost half of West Germans eligible to claim a state pension at age 60, for example, enter retirement after having first participated in a disability program.

Winfried Schmähl, who advises the West German government on pension policy, estimates that if the average retirement age of German workers, currently just under age 60, remains unchanged, payroll taxes will rise from 18.5% of paychecks to over 41% by 2030. Keeping older workers on the job just one year longer, he figures, could re-

North African laborers are picking up a growing share of the harvest on Italian farms.

DENIS REGNIER—CONTRASTO

duce that impending payroll tax bite to around 38%.

Right now, no European politicians are advocating taking anything away from their elderly. But for most, the obvious alternative—absorbing more labor from people-rich places like their former African and Asian colonies or countries such as Turkey—is even less palatable. Drawn by the brighter employment prospects that the single market holds, such workers, who last arrived in great numbers in the early 1970s, are starting to wash up on Europe's shores again. So far the European Community countries have responded by tightening immigration laws, with a few halfhearted exceptions like the amnesty that the Italian government is currently offering illegal immigrants.

But Norbert Walter, chief economist with Deutsche Bank, thinks that predictable reaction is shortsighted. A more liberal policy, he argues, would help both Europe and its neighbors. Says he: "Our economies have never faced such a massive change in age structure at a time of such rapid technological change and increasing global competition." One sensible step he advocates is to set aside places in European universities for more Third World students, as the native-born's number declines.

Immigrants wait for good news in a Tokyo visa line. Only a few will get to stay.

Lavish retirement centers cater to Japan's record-breaking numbers of elderly.

UNITED STATES

No country is better positioned to cope with demography's future shocks than the U.S. During the 1990s America's working-age population will be the largest and most productive in its history. Some 78 million baby-boomers who depressed productivity as neophytes in the 1970s and 1980s will be reaching their mid-30s and 40s as seasoned, mature employees. Meanwhile, the proportion of new retirees to workers will decline for a while.

The danger is that the U.S. will be lulled into an unwarranted sense of complacency. By 2000, when the oldest of the boomers will be 55 and thinking about early retirement, the Medicare trust fund could already be exhausted. A study for the Ways and Means Committee in Congress estimates that if Medicare outlays grow by just 1% a year beyond current baseline estimates, annual deficits in the elderly health care system will top $180 billion by the late 1990s.

As the boomers start retiring in droves after 2010, federal spending on the elderly—29% of the budget today—will soar. How high? That's anybody's guess. Just don't count on the Social Security Administration to guess right. For example, the SSA expects U.S. birthrates to rise from the current 1.8 children per fertile woman to near replacement level by 2000 and remain there. But with nearly 70% of all women of childbearing age in the work force, contraception all but universal, divorce rampant, and one pregnancy in four ending in abortion, that assumption looks like fantasy. Should birthrates drop, instead, to the 1.6 rate assumed in the SSA's more pessimistic scenario, spending to support retired baby-boomers will exceed the fund's projected income by 35%.

The work force shouldering that awesome burden will be more diverse than any in America's postwar history. Netting out arrivals and departures, over 80% of the additions to the work force in the 1990s will be blacks, Hispanics, recent immigrants, and women—increasingly, single mothers supporting dependent children.

Moreover, a terrifying gap looms between the skills that employers need and the training that this new work force will have received. The Bureau of Labor Statistics estimates that jobs requiring a college degree will rise from 22% of the total to 30% by the end of the century. But college enrollment among black youth declined 7% in the past decade. Among Hispanics, the fastest-growing group of new labor force entrants, the high school dropout rate is 40%, triple the national average. Says Frank Doyle, senior vice president of corporate relations at General Electric: "The demographic shortfall is being compounded by a severe educational deficit."

That deficit will only worsen if America's family structure continues to weaken. Nearly a quarter of the 3.8 million births recorded in 1987 were to unmarried women—a 40% increase since 1980. Some 62% of all black infants were born out of wedlock, one-third to teenage mothers. Today, 60% of black children and 20% of white children live with a single parent, and poverty in these households is widespread. The Committee for Economic Development calculates that if these trends continue, by the year 2000 the U.S. could have as many as 20 million young working-age adults with poor prospects of holding *any* job.

Obviously the nation cannot afford to squander so much potential talent. But what

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is to be done? Says GE's Doyle: "For U.S. corporations, tomorrow's competitive battles will be won or lost on the strength of their ability to build and retain a skilled work force." The weapons for waging that battle begin with effective preschool programs like Head Start and extend to expanded, career-long, on-the-job training by employers.

The U.S. should also rethink its immigration policies. No society in history has proved more able to absorb large numbers of immigrants successfully. Over the past decade, America opened its doors to nearly 600,000 new migrants a year—the greatest

"The form and fit of American life is still geared to a steady supply of large numbers of young people, who just aren't going to be there in the future."

number since the early 20th century. But the country needs more—as many as a million a year—to compensate for its low birthrate.

Would more immigrants hurt workers born in the U.S.A.? Almost certainly not. In a newly published book, *The Economic Consequences of Immigration*, Julian Simon, a professor of business administration at the University of Maryland, concludes, after an exhaustive study, that immigrants contribute far more in taxes paid—including Social Security taxes—than they consume in welfare benefits. He also demolishes the myth that immigrants take jobs away from the native-born. "There are lots of painful antidotes to America's demographic pressures," Simon says, "but allowing in more immigrants is the only painless one."

In addition, the U.S. should follow the lead that Canada and Australia have taken and admit more immigrants on the basis of their education and skills. Right now such decisions depend almost exclusively upon whether an applicant has relatives who have already been accepted into the U.S.

America's other huge source of potential new labor is the elderly themselves. According to the National Center for Health Statistics, nearly two-thirds of the U.S. populace ages 65 to 74 are hale and

hearty. But those willing to keep working confront serious disincentives. For starters, once retirees under 70 reach an earnings ceiling of $9,360, the Social Security benefits that they receive fall by $1 for every $3 they earn. Add on state, local, and Social Security taxes, and would-be older workers can pay a marginal tax rate of more than 80%.

Small changes could make a big difference. When Congress reformed the Social Security system in 1983, for example, it agreed to raise the age at which retirees receive full benefits from 65 to 67 over a 24-year period, starting in 2003. But it kept the age of eligibility for collecting at least partial benefits at 62. Princeton University economist Alan Krueger estimates that if this early retirement option were lifted to age 65, workers in the 62-to-64-year-old group might produce as much as $25 billion in new tax revenues.

For generations that have come to view early retirement as their inalienable right, the suggestion that they should stay at work longer is the moral equivalent of castor oil. But combining such changes with steps to permit more flexible employment options *during* one's working life could make them easier to swallow.

JUST IMAGINE that employers make more room for experienced retirees to take part-time jobs. What would happen? Younger workers might be freed up to return to school for further training, single mothers to spend more hours with their dependent children, and the increasing number of Americans who must devote time to the care of aging parents given a much needed break. Such a radical shift makes social as well as economic sense. Says Ken Dychtwald, author of a recent book entitled *Age Wave* and chairman of a consulting firm bearing the same name: "The form and fit of American life is still geared to a steady supply of large numbers of young people, who just aren't going to be there in the future. As our country ages, we have to redesign the economy to facilitate resource sharing across the generational divides."

Ultimately, that's the difference between managing the coming demographic upheaval and suffering an actual earthquake. We already know roughly when the upheaval will hit and how hard. The extent of the damage, then, depends upon how well governments and corporations throughout the industrialized world prepare. And how soon. F

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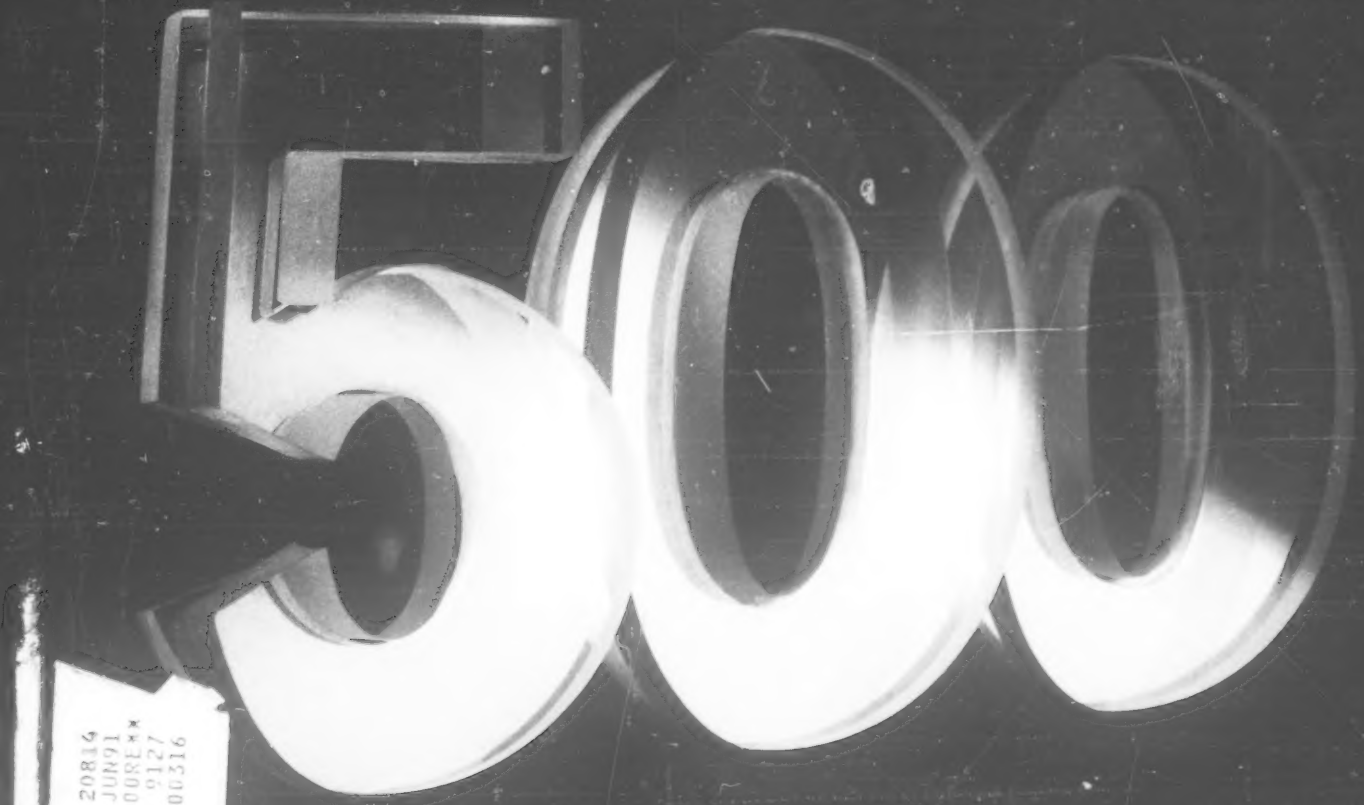

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Will van Overbeek photographed this Arkansas welding class (see page 56).

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"It is very important that we have a long-range vision of where this country needs to be."

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"Don't run out of cash, and don't ever turn down an order."

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"Applying for the Baldrige and getting the feedback they give you is of incredible value to a company."

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"We could educate ourselves and do research until we are blue in the face, and we still would not be competitive."

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"In the past the attention was on minorities as a *problem*, on women as a *problem*."

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"Children are a great investment. They beat the hell out of stocks."

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COVER: This lucite 500 was constructed by Nicholas Fasciano and photographed by Roberto Brosan.

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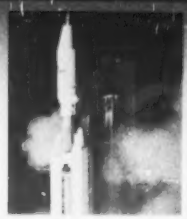

"Every time we sell one Titan launch overseas, it offsets the import of 10,000 Toyotas."

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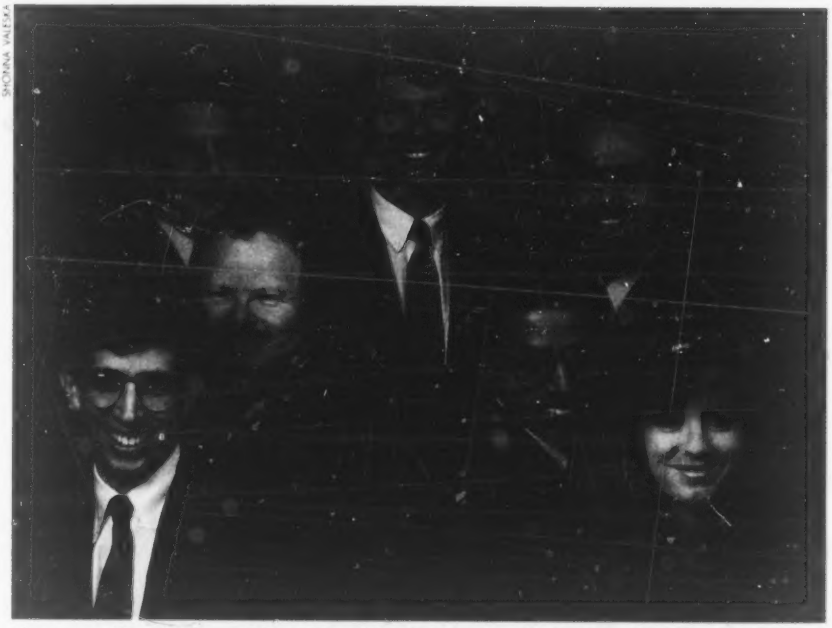

SHONNA VALESKA

Members of the 500 team: Editor Richard Kirkland (center) flanked by writers Peter Petre and Andrew Kupfer and (front) reporters Mark Colodny, Wilton Woods, Rahul Jacob, and Ret Autry

IF YOU CAN CALL the 396-page text you hold in your hand a book, it is surely the most popular business book of the year—any year. The FORTUNE 500 is not only part of the language (it's listed in the *Oxford English Dictionary*) but also a source for government statistics (figures from the 500 are included in the *Statistical Abstract of the United States*). Chief executives and other managers use our annual directory of the 500 largest U.S. industrials to compare how their companies are doing against others, to help set compensation plans, and as a handy year-round reference tool.

To lead off this year's 500 issue, we have eight forward-looking articles addressing an urgent theme: industrial competitiveness and how to improve it. Says senior editor Richard Kirkland, who edited the 500 package: "Competitiveness is not some Zen state that, once achieved, you never lose. You have to keep striving for it. Our package offers valuable advice on what companies and the government should and shouldn't do." Among the policy recommendations: Spend more on roads, bridges, and airports; shift investment out of the arms race into deserving commercial technologies; and set up communications systems to keep small, entrepreneurial manufacturers abreast of the latest technological developments.

The 12-week job of assembling the 500 listings fell to reporters Ret Autry and Mark Colodny, who were supervised by our list expert, chief of reporters Evelyn Benjamin. To meet a March 28 deadline, they worked through back-to-back, 100-hour weeks, compiling and checking questionnaires and logging the data into our computer. "We came to view it as an experiment in sleep deprivation," says Colodny. It also proved to be an excellent crash course in accounting for these two recent liberal arts graduates, whose curricula at the University of North Carolina and Harvard never included scrutinizing annual reports or crunching numbers. To inspect their efforts, which will be followed by our Service 500 in the June 4 issue, see the Industrial 500 directory beginning on page 337.

Marshall Loeb

MANAGING EDITOR

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BY ANDREW EVAN SERWER

HIGH-TECH STOCKS SHOULD BE THE FORTUNE 500's NEXT HIGHFLIERS

■ After chugging along nicely for most of the year, shares of the nation's largest industrial companies were derailed in the winter months by weak earnings and rising interest rates. For the 12 months ended March 16, stocks of the FORTUNE 500 companies rose only 1.3%. A few groups remained full of steam, but several former winners, like tobacco and metals stocks, lost ground. For the year ahead, many Wall Streeters foresee slim profits overall, but they point to a few industries that should buck the trend and produce lavish returns.

According to Lynch Jones & Ryan, whose I/B/E/S service polls thousands of Wall Street analysts for their earnings forecasts, the betting is that FORTUNE 500 companies should manage no better than 6.5% growth in earnings in 1990. Even that modest prediction could be cut back on as the year proceeds. Security analysts typically start the year with optimistic forecasts and then pare them as the months pass.

As in all years, there will be winners and losers. Most analysts say that stocks of computer companies and chipmakers will be the standout performers in the months ahead. "Technology is my favorite group right now," says Byron Wien, Morgan Stanley's U.S. investment strategist. He believes companies will step up purchases of technology to improve productivity, resulting in a prolonged run for high-tech stocks. Says Wien: "Look for stocks selling at roughly the market's P/E, where the company enjoys dominance in a sustainable product and is in the early stage of a product cycle."

Who fits the bill? Wien's favorite is **Intel**, whose 80486 microprocessor is expected to be the engine of a powerful new generation of PCs and workstations. According to the I/B/E/S consensus, analysts expect Intel's earnings to climb 26% in 1990. "Here is one of America's technology leaders with superior earnings growth, selling close to the market's P/E multiple," says Wien.

In the computer sector, analysts are equally excited by **Apple Computer** and **Compaq Computer**. Both are expected to log 20% earnings gains this year, and the stocks sell for only 11 times estimated earnings, well below the market's P/E of 13.6. "We strongly recommend these two stocks right now," says Eugene Glazer, technology analyst at Dean Witter Reynolds.

Charles Clough, chief investment strategist of Merrill Lynch, is similarly bullish on technology, but he is also loading up on some less glamorous stocks. "The U.S. will have to spend more on capital equipment to compete," he says. Two stocks Clough likes are **Deere**, the tractor maker, which sells for just 11 times expected 1990 earnings, and oil services company **Baker Hughes**, where higher oil prices and increased drilling activity are producing a gusher on the bottom line. Analysts foresee

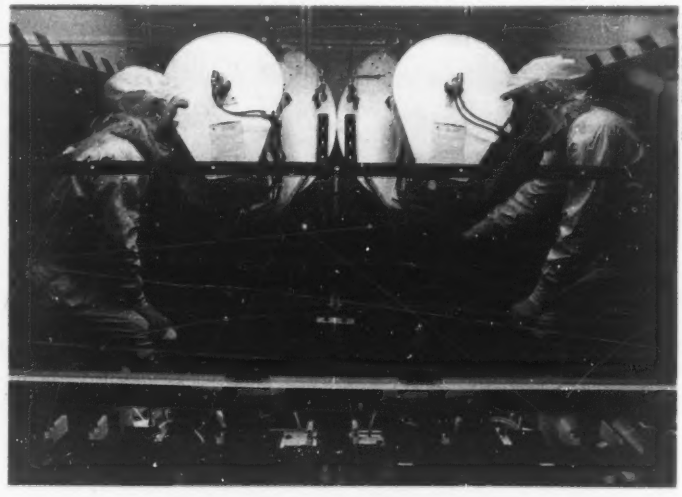
500

SOURCE: INSTITUTIONAL BROKERS ESTIMATE SYSTEM

INDUSTRY	AVERAGE STOCK PRICE CHANGE 12 MONTHS TO MARCH 16	ESTIMATED EARNINGS GROWTH IN 1990	P/E*
Toys	36.9%	16.6%	10.7
Mining, crude oil production	33.2%	7.9%	24.2
Beverages	15.2%	16.3%	17.4
Apparel	9.1%	17.4%	10.4
Pharmaceuticals	9.0%	15.1%	15.0
Soaps, cosmetics	8.5%	10.1%	14.3
Electronics	8.4%	11.7%	13.9
Computers, office equipment	8.4%	33.0%	13.3
Industrial, farm equipment	6.2%	14.7%	16.1
Building materials	4.8%	2.7%	11.8
Metal products	4.6%	29.4%	13.5
Forest products	4.4%	-12.9%	10.4
Petroleum refining	4.2%	5.6%	13.3
Furniture	3.3%	8.9%	11.4
Food	-1.0%	15.0%	13.8
Metals	-2.0%	-24.8%	9.6
Scientific and photo. equipment	-2.4%	7.4%	12.7
Tobacco	-3.7%	9.4%	11.5
Publishing, printing	-4.1%	-9.9%	15.7
Rubber products	-4.8%	-15.8%	14.9
Chemicals	-9.9%	-3.7%	11.0
Aerospace	-10.2%	44.6%	9.9
Textiles	-11.9%	4.3%	11.0
Motor vehicles, parts	-24.1%	-22.1%	10.6
FORTUNE 500	1.3%	6.5%	13.2

*Based on estimated 1990 earnings.

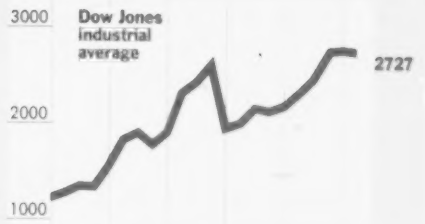
Toy stocks took top honors for the past 12 months, but analysts say the new market leaders will be companies like Intel, where the high-tech machines that make its new 80486 microprocessor will be working 24 hours a day to meet heavy customer demand.



THOMAS BURTNETT, INTEL

STATE OF THE MARKETS

Stocks



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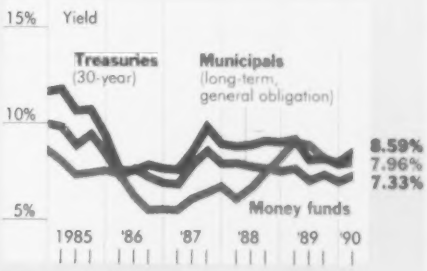
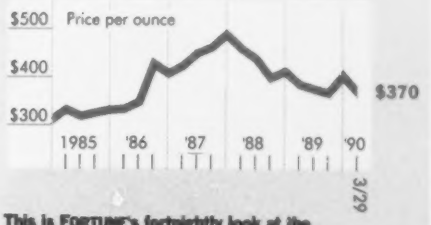


Gold



This is FORTUNE's fortnightly look at the major markets of the past five years

CHARTS SHOW END-OF-QUARTER FIGURES.

BASED ON EARNINGS FOR THE LATEST FOUR QUARTERS.

SOURCES: STANDARD & POOR'S, BOND BUYER, DONOGHUE'S MONEY FUND REPORT, COMMODITY EXCHANGE

a 59% growth in Baker Hughes's earnings this year.

Higher oil prices have also been a boon to the mining and crude oil production group, which chalked up a 33% gain over the past 12 months. Yet despite forecasts for respectable earnings growth again in 1990, analysts are wary of most energy stocks. "This group is a little ahead of itself," says Richard Straley, an analyst with Stephens Inc. in Little Rock, Arkansas. For the long haul Straley recommends drillers with a heavy mix of natural gas business, like **Louisiana Land & Exploration** and **Mitchell Energy**.

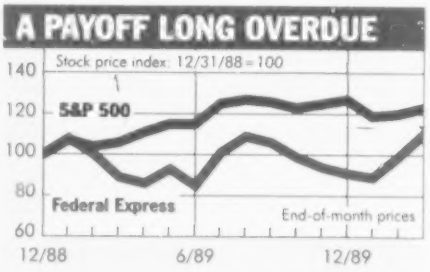
While aerospace stocks may look awfully tempting with their projected 1990 earnings growth of 45%, most analysts are warning their clients to steer clear. The industry's heady earnings growth forecast is inflated, they say, because last year's earnings were depressed by big write-offs. Don't be tempted by the stocks' dirt-cheap multiples either. Analysts believe that disarmament and the budget crunch will keep the group grounded for months to come.

Last year's booby prize goes to motor vehicles and parts. The group's shares fell 24%, dragged down by weak demand for cars and trucks and even weaker pricing. Now that these stocks have been relegated to the junkyard—many have single-digit P/Es—a few analysts have turned bullish. But most are holding back. Continued price cutting and sluggish demand, they contend, will postpone any recovery in share prices.

The metals and metal products groups both fell flat in 1989, but analysts expect their paths to diverge in 1990. Because metals prices have declined, earnings for the metals group, which includes metal producers like **Alcoa**, are expected to plummet 25% in 1990. Meanwhile, earnings in the metal products group—companies that typically use a lot of metal—are expected to strengthen as weak metal prices lower production costs. Companies such as **Ball**, a maker of aluminum cans, stand to be big beneficiaries from the trend. John Tumazos of Donaldson Lufkin & Jenrette sees Ball's operating income climbing from 0.4 cents per can to 0.7 cents this year, yet the canmaker's shares, he points out, sell for slightly less than the market's multiple. Sounds like a can-do kind of stock.

IS FEDERAL EXPRESS STOCK ABOUT TO DELIVER?

■ Talk about a bumpy ride. For the past four years stockholders of Federal Express have been rocked by one jolt after another. In 1986 the company lost more than $300 million on its ill-starred facsimile service named ZapMail. In 1988 earnings growth was diminished by a costly campaign to establish package delivery service abroad, a move that culminated in the 1989 acquisition of heavy freight carrier Tiger International for $880 million. Also in 1989, the earth sneezed and three natural disasters—Hurricane Hugo, the San Francisco earthquake, and a volcanic eruption in Anchorage, Alaska—disrupted delivery and cost the courier millions of dollars. Reflecting those lumps, the stock's recent price of $56 is below what a share sold for in 1985.



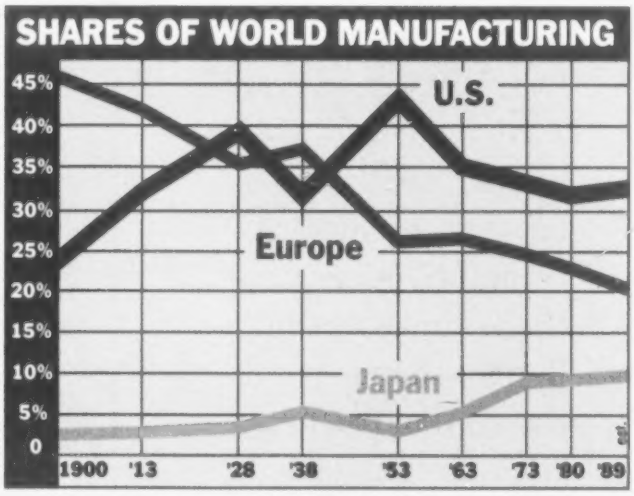
Lately, however, some savvy folks have begun betting that the payoff from Federal Express shares is about to commence. They expect a triple scoop of good fortune for the company in the year ahead: declining costs, rising deliveries, and higher rates for its services. The strong earnings improvement, they contend, could push the stock as high as $100 per share by 1992. Says Tad Trantum, an analyst at J.C. Bradford & Co. in Nashville: "I've been following transportation companies a long time, and I've never seen anything more exciting."

Though the difficulties of integrating Tiger are not over, many of the costs associated with the acquisition are beginning to decline, as are the huge outlays for developing overseas facilities. Meanwhile, volume is rising at a 15% rate for Federal's domestic business and a 35% rate for international. What's more, the company has just put into effect across-the-board price increases. Kevin Murphy

LIFTING AMERICAN

The United States is no slouch now, but it needs to do better. Washington could help by adopting savvy new strategies to invest in excellence. ■ *by Peter Petre*

WITH THE END of the Cold War, America enters an era in which national power is increasingly determined by economic rather than military might. In this new world where industries, not arsenals, matter most, competitiveness—a nation's ability to meet the test of the global market while raising living standards at home—becomes the key index of strength. So how does the U.S. stack up? And what are the essentials needed for success in the future?



For nearly a century, U.S. industrial production has held strong.

Gauged by the broadest measures, America isn't doing badly as things stand today. Declinists, who draw fashionably gloomy comparisons to England at the end of the British Empire, are exaggerating. Consider the chart above, based on research by economic historian Paul Bairoch of the University of Geneva. At roughly 32%, the U.S. share of world manufacturing production is about where it was in 1913 and 1938, before the century's two world wars—hardly the profile of a nation on the wane. The slide in the 1950s was actually welcome, for it was evidence that the U.S. had succeeded in helping its allies rebuild economies that had been devastated by World War II. Since then America has held its ground.

Nor has the U.S. economic engine broken down. Economists Robert Lipsey of Queens College and Irving Kravis of the University of Pennsylvania calculate that the trend-line annual growth of real per capita income in the U.S. has stayed at roughly 2% for more than 100 years. Other nations are expanding faster, but they won't glimpse America in their rearview mirrors anytime soon. Herbert Stein, former chairman of the President's Council of Economic Advisers, recently observed that if the trends of the past six years continue, Japan's per capita output would surpass America's—in 33 years. "That," noted Stein, "is a big if, and a long time."

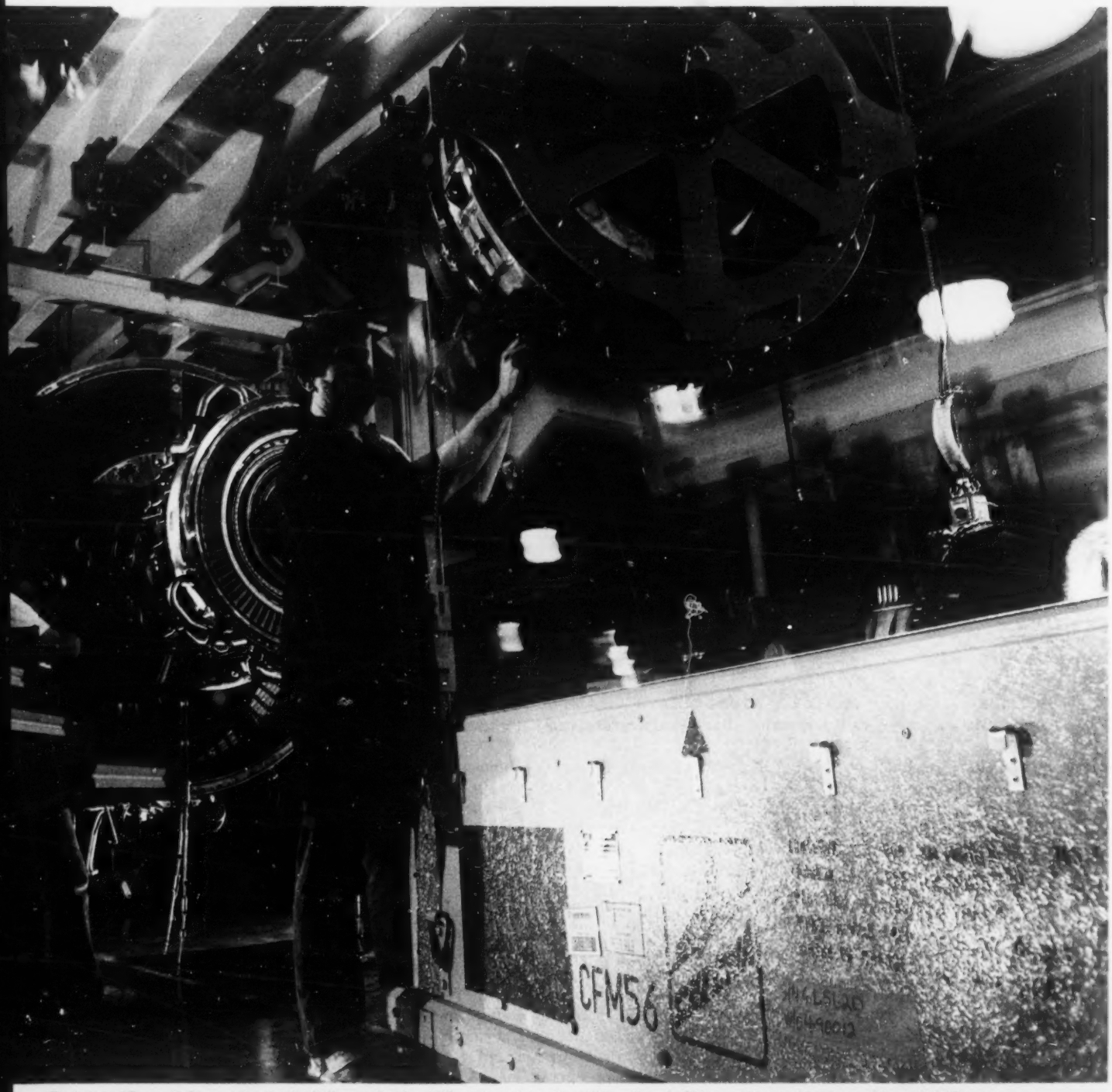
Does this mean the U.S. has nothing to worry about? No. A number of important warning lights *have* begun flashing in recent years. During the 1980s, American producers lost huge chunks of the market to foreign suppliers of computer chips and machine tools—high-tech sectors crucial to industrial strength in the 21st century. In 1983, Japan's Ministry of Trade and Industry analyzed U.S. and Japanese prowess in 40 key sectors of commercial technology, from assembly robots to skyscrapers. It found Japan lagging in nearly half. In an update of that study five years later, MITI concluded that the U.S. had held its lead in only

THE FORTUNE 500
The list of the largest U.S. industrial companies begins on page 337.

Winning through cooperation, a joint venture of General

PHOTOGRAPH BY MICHAEL L. ABRAMSON

COMPETITIVENESS



Electric and France's Snecma is a leader in the market for civilian jet engines. Here GE workers in Ohio uncrate a turbine assembly made in France.

one area (database software). America continues to spend less on civilian R&D than its rivals: 1.8% of GNP, vs. 2.6% in West Germany and 2.8% in Japan. Most troubling for the future is the huge and continuing gap between U.S. and Japanese productivity growth (see charts).

INDIVIDUAL companies and managers deserve the rap for much of this slippage (see "Lessons From U.S. Business Blunders"). But the government has also served American industry poorly. Says Caterpillar President Donald Fites: "There's less sensitivity to manufacturing than before." The litany of government's shortcomings in recent years is as depressing as it is familiar. Among them: a pathetically inadequate education system and persistently huge budget deficits, which help drive up the cost of capital, foster record trade deficits, and lead to pressures for costly protectionism.

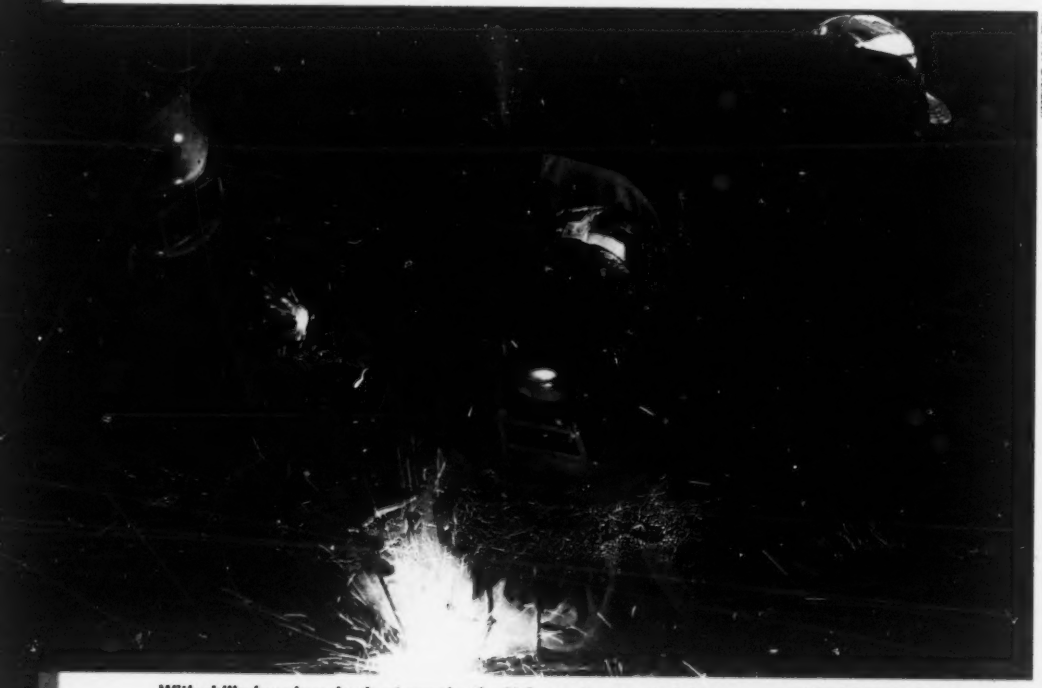
Many big American corporations have grown adept at overcoming obstacles without any help from Washington. Take General Electric, which contributed a herculean $4.1 billion to U.S. exports of manufactured goods last year. When GE runs into protectionist barriers, Chairman Jack Welch applies what he calls "company-to-country relations," using GE's connections or muscle in one industry to pry open doors in another.

Three years ago, GE wanted to swap its consumer electronics business for the European medical equipment business of France's Thomson, a state-owned conglomerate. The bureaucrats in the Élysée Palace readily agreed—largely because of the good will created by GE's successful 16-year-old joint venture with Snecma, another government-owned company that makes jet engines. Similarly, in the mid-1980s Texas Instruments got serious about whittling down capital costs when it found it was paying twice as much for funds as chipmakers in Japan. The company has since cut that gap in half. One key, says Chief Executive Jerry Junkins, was gaining the right to sell equity on the superheated Taipei stock market, by agreeing to build a plant in Taiwan with a local partner.

U.S. companies have also begun tackling the country's unmet social needs head on. Boeing, the nation's largest exporter, is providing money and technical help to elementary and high schools in Seattle. "For years we've given money to engineering and computer-science programs at universities," says Dean Thornton, chief of Boeing's commercial aircraft unit. "We have to broaden that now, because the elementary schools aren't getting the job done. The U.S. has got to get off its butt in education."

To maintain its leading role in the world and ensure its citizens better lives, America must do more to boost competitiveness. But it would be a mistake to forge this sense of national purpose with either the tactics or the rhetoric of crusades past. Call this the metaphor problem. Economic competitors such as Japan or the European Community are not enemies but opponents, and sometimes may even be teammates. Unlike war—hot or cold—economic competition can make both sides richer and stronger.

The challenge in this new era, then, is to figure out how to play this game more efficiently—and pursue American economic interests more aggressively—without destroying the international order of free trade and capital movement that the U.S. has nurtured and sacrificed for since the end of World War II. In wide-ranging interviews with executives, government officials, and scholars, FORTUNE has assembled a checklist of moves to make, and pitfalls to avoid, as the nation pursues this goal.



WILL VAN OVERBEEK

With skilled workers in short supply, the U.S. needs more training programs like this one in Arkansas.

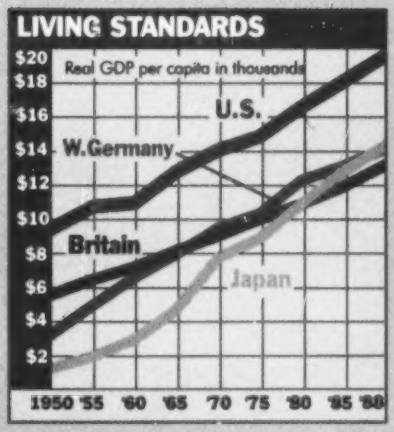
■ **CUT THE BUDGET DEFICIT NOW.** Yes, it's familiar advice, and politically daunting to pull off. But that doesn't mean it shouldn't be done. The best approach is to start with the spending side, though not by hacking away across the board. Some categories of federal expenditure, after all, represent investments: among them, education, research, and transportation. Paying for more in these areas by trimming the share of the budget devoted to consumption is the ideal way to boost competitiveness and national wealth. Programs that deserve a haircut include subsidies for wealthy farmers and entitlements for the middle class that are not means tested, such as Medicare.

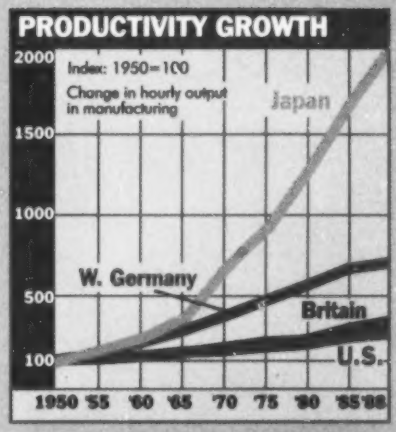
If this balancing act can't be maintained and the deficit persists, then taxes will have to rise, as surely as the Washington Monument points skyward. In FORTUNE's view that would be preferable to another decade of gargantuan federal dissaving—as long as the taxes take their bite out of consumption rather than investment.

Many chief executives agree. In a FORTUNE 500/CNN Moneyline Survey last year, 80% of the CEOs polled favored the use of consumption taxes to balance the budget. Most would also like to see Congress change the tax law to encourage more investment, say, by reducing the capital gains tax as President Bush has proposed.

continued

REPORTER ASSOCIATE *Wilton Woods*





AMERICA'S PLACE IN THE COMPETITION RACE

By almost any measure, the U.S. remains the country to beat. Its share of world exports has rebounded after declining for much of the postwar era. Its wealth per capita, adjusted to reflect differences in purchasing power, is unmatched by any major rival. The same goes for total productivity (see table at right): The average Japanese worker still takes until mid-afternoon to produce what the average American can before lunch. Only in productivity growth—the key to future prosperity—does the U.S. look like a country in trouble.

TOTAL PRODUCTIVITY*

	U.S.	Japan	W. Ger.	Britain
1950	$24,082	$ 3,655	$ 8,290	$12,932
1970	$35,670	$16,303	$22,084	$20,768
1988	$41,281	$29,678	$33,605	$29,771

*Output per employed person in 1988 U.S. dollars.

As a political first step, the budget-balancing package proposed last month by House Ways and Means Committee Chairman Dan Rostenkowski is right on four counts. It trims consumption through a one-year freeze on Social Security; it raises the marginal tax rate paid by the rich to levels now imposed on the merely well-off; it keeps America's otherwise low tax rates unchanged; and it draws most of the revenue from putting the touch on alcohol, cigarettes, and gasoline.

■ STICK WITH FREE TRADE. With the trade deficit still hanging at $110 billion after 14 years in the red, and foreign purchases of U.S. companies and real estate at record levels, Americans do not approach trade issues in a tranquil frame of mind. Though some observers, such as MIT's Lester Thurow, think a unified Europe will be America's greatest challenger by the end of the 1990s, Japan holds that title today. Its stunning success in seizing markets long dominated by the U.S. and its emergence practically overnight as America's biggest creditor have prompted many economists to reexamine their theories of international trade. Some even speculate that Japanese-style capitalism has made America's free-enterprise approach obsolete. In a Gallup survey last fall, more than half of those polled cited Japan as a greater danger to U.S. security than the Soviet Union.

Such fears are one reason Congress passed the Trade Act of 1988, which requires the White House either to wrest concessions from Japan or to impose higher duties and other sanctions on Japanese goods. Trade Representative Carla Hills is trying to win openings in the Japanese market for U.S. satellites, supercomputers, and lumber. But thus far, vigorous negotiations have produced handwringing, promises, and little else.

Does that mean it's time to give up on free trade? A growing number of politicians and some CEOs think so. Ford Motor's new boss, Harold "Red" Poling, argues that the only way to close the $50-billion-a-year U.S.-Japan trade gap is by delivering an ultimatum. "Just give the Japanese a target, say, reducing the gap by $10 billion a year for five years, and let them figure out how to hit it," he suggests.

But such a showdown would surely hurt both countries and could send the world spiraling back toward Depression-era economic Balkanization. Besides, even neomercantilists with an exaggerated notion of the importance of trade surpluses acknowledge that bilateral imbalances are less critical than the overall balance. In FORTUNE's view, if the U.S. cuts its budget deficit, thereby lowering its need for foreign capital, its trade deficit will continue to decline as America's export competitiveness grows in the 1990s.

continued

Ford Motor is building light trucks in Kentucky for its Japanese ally Mazda.

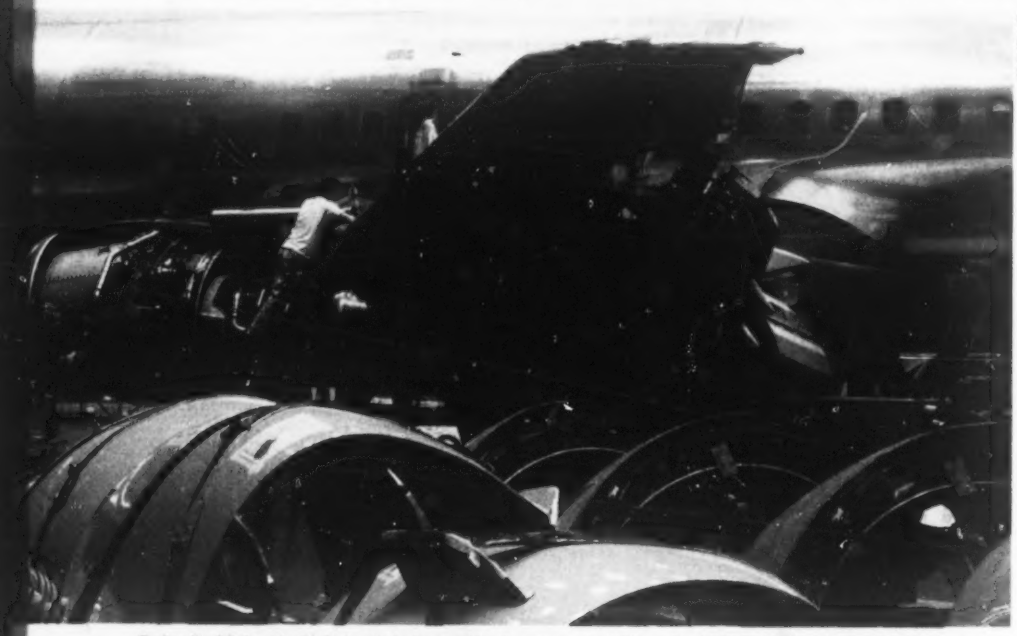
OVAK ARSUNIAN

■ **WANTED: SMARTER KIDS, SMARTER IMMIGRANTS.** Like New Yorkers swapping tales about the subway, managers don't need much prompting these days to spill their guts about the failings of America's schools. Here's a horror story from Motorola. The company recently determined that employees should have at least fifth-grade math skills and seventh-grade reading skills to work in its plants—only to discover that fully half its workers need remedial training to reach this level. Now comes Congress's Office of Technology Assessment (OTA), which offers this grim prediction about the quality of American labor in a February report: "The prospect is that things will get worse, not better." With the growth rate of the U.S. work force declining, employers are drawing increasingly on groups that have long been disadvantaged, such as blacks and Hispanics. Business and government will have to share the enormous cost of training these workers.

All industrialized economies are facing labor shortages. Where America has a huge competitive edge is in its unparalleled ability to construct a labor force out of a heterogeneous, immigrant population. Says British historian Eric J. Hobsbawm: "The U.S. may be the only major industrial country that already lives in the 21st century, which will be a century of global labor flows."

The U.S. absorbs some 650,000 immigrants per year—more than all other industrialized nations combined. Raising that quota and changing the rules to bring in more immigrants on the bases of their education and skills would be a cost-free way to lift the quality of the U.S. work force while waiting for the long-term payoff from education reform.

■ **STOP PASSING THE BUCK ON PUBLIC WORKS.** The Federal Highway Administration reports that 41% of the nation's 575,000 bridges are "structurally deficient" or "obsolete." Some 62% of its highways need to be resurfaced. Not one major airport has been built in the U.S. since 1974, despite a doubling of air traffic in the 1980s. The result: growing gridlock on America's highways and skyways.



Doing its bit for the U.S. trade balance, Boeing exported 81 series 737 jets like this one last year.

The cost is enormous. Traffic delays waste precious fuel and time, aggravate urban smog, and play havoc with just-in-time inventory systems. According to Chicago Federal Reserve Bank economist David Aschauer, underinvestment in public works may have caused fully half the slowdown in U.S. productivity growth since the boom years of the 1960s.

Even economists who think Aschauer's estimate is too high—and many do—agree that this is a problem that needs addressing. The debate is over who pays. President Bush wants to hold federal public works spending constant, even though total physical capital investment by the federal government has shrunk from 24% of federal spending in 1960 to around 11% today. In his new national transportation strategy, Bush calls for shifting much of the financial burden to states, localities, and the private sector. But if the U.S. wants a smooth-running *national* transportation system in the year 2000, Washington will have to pony up much more cash than the President has proposed.

How much? Some estimates are clearly absurd. The National Governors Association puts the bill as high as $3 *trillion* over the next 20 years. That's over half one year's U.S. GNP—the equivalent of taking the entire populace and putting it to work for seven months pouring concrete. At a minimum, though, the federal government has to start spending down the $25 billion surplus it has built up in its highway, inland waterway, and airport trust funds. Today these merely paper over the deficit; they ought to pave the way to greater competitiveness.

■ **ADOPT A NEW TECHNOLOGY POLICY.** Back in the 1950s and 1960s, the arms race at least helped galvanize the U.S. economy. Consumers have the Cold War to thank for the speed with which computers, jet airliners, microwave ovens, and the interstate highway system came into being; all these innovations had their roots in defense projects. But in the past 20 years defense R&D has become a drag. It diverts thousands of scientists and engineers from commercial endeavors, and as weapons have grown more exotic, fewer military inventions spill over into marketable products.

Abundant evidence of American decline can be found in civilian high tech. While no nation can lead in every area of technical and manufacturing knowledge, an economy the size of America's should strive to compete in all. Market forces can move the country a long way toward that goal. But the erosion of America's advantage in critical areas is so dramatic that the nation ought to consider hedging its bets.

That's what lawmakers did at former President Teddy Roosevelt's urging in 1915, after aviation enthusiasts warned that Europeans were beating the U.S. in the race to commercialize the Wright brothers' invention. Congress started the National Advisory Committee on Aeronautics, the predecessor of today's NASA, which gave a huge boost to civil aviation. Among its contributions: providing large wind tunnels that none of the struggling aircraft companies of the day could afford. *continued*

To make a similar move today, the Bush Administration would have to get beyond its aversion to bureaucrats "picking winners and losers" and allow more federal dollars to flow into technologies and manufacturing processes that appear to have long-term commercial promise. At the moment that's just a trickle. In 1986 less than $500 million of the federal government's $56 billion research budget went into industrial research, according to an analysis by Telesis, a Providence, Rhode Island, consulting firm. That same year, Japan focused 80% of government R&D spending—$9 billion—on manufacturing industries.

This massive D10N crawler-tractor has helped Caterpillar keep its No. 1 market share worldwide.

WITH THE OUTBREAK of peace, the U.S. can afford to spend more than it has in the past. Grandiose investments in such projects as magnetically levitated trains or hypersonic airplanes would be a mistake. It's hard to forget Jimmy Carter's synfuels program, which sucked $2 billion into a lot of technological dry holes. But the government can reduce the likelihood of similar embarrassments by following two simple rules of thumb.

Rule No. 1: Follow where industry leads. If businesses won't put up at least half the money for a project, it's probably not worth funding. Nearly 200 cooperative research ventures have been launched since Congress eased antitrust barriers to them in 1984. The most prominent is Sematech, the semiconductor industry's giant manufacturing research consortium. The government might encourage the most promising of such ventures with matching funds. A recent proposal that deserves consideration: working with industry to bring U.S. homes into the 21st century by replacing their telephone lines with high-capacity optical fibers. This would stimulate rapid development of a whole new generation of consumer electronics products, from facsimile machines to digital television.

Rule No. 2: Support lots of little projects. That has been a winning strategy for Darpa, the Pentagon's agency for advanced R&D, which has scored breakthroughs in fiber optics, high-temperature ceramics, and the computing technique known as parallel processing. Says Intel Chairman Andrew Grove: "You don't need an elaborate new bureaucracy to defend America's technological industries. Just put some additional money in the hands of existing expert agencies that know what the problems are and what can be done."

In the view of shrewd technologists such as Ralph Gomory, the former head of R&D at IBM, keener attention to the nuts-and-bolts of manufacturing is the key to solving America's competitiveness problems. Here Washington's role should be to promote excellence by setting goals, such as the new Baldrige award for quality, and by providing modest grants.

Removing antitrust barriers for joint manufacturing ventures, as President Bush has suggested, would also help spread knowledge of advanced production techniques. But that's also another reason to adamantly resist protectionist pressure to block foreign goods. Nothing would be more devastating to U.S. competitiveness than to have the government create cartels and then shelter them.

FINALLY, Washington should explore ways to make more of the nation's small- and medium-size manufacturers worldclass. Most are not heavily involved in global markets themselves. But as suppliers to big manufacturers, they have an important indirect effect on U.S. competitiveness.

West Germany and Japan have many ways to back up such firms. Japan spends close to $500 million annually on a public network of manufacturing support centers. When the president of Showa Precision Tools, a successful $1.2-million-a-year diemaking company in Yokohama, got ready to buy new equipment for his plant in 1988, he received a free evaluation of his purchase plan from manufacturing experts at the Yokohama city office. (The city will also, upon request, dispatch a *sensei,* or master, to drill shop foremen in quality-control techniques.)

So far the U.S. has only a fledgling $10-million-a-year network, run by the Department of Commerce, to provide technical support. The cost of extending it to even half of America's 350,000 small- and medium-size manufacturers could quickly climb toward moon-shot proportions. One way to hold down the price tag—and provide a market test of the program's effectiveness—would be to charge a small user fee. As long as the network provides useful information, companies should willingly share the cost.

While capitalism now rules the world, it is a diverse, imperfect capitalism that pits American free-marketers against European social democrats and Japanese practitioners of strategic trade. To stay competitive in this friendly free-for-all, the U.S. doesn't need to rethink its basic economic model. It just needs to ensure that, in the areas where business and government inevitably intertwine, its strategies work. F

EAGER TO TAKE ON THE WORLD'S BEST

American chief executives think their companies are readier than ever for the global battle, which they say they'll start winning—especially if the rules allow a fair fight. ■ *by Susan E. Kuhn*

WORRIED about declining American competitiveness? Most CEOs aren't. Two-thirds think that U.S. enterprises in their industries are *better* prepared to face the globe's best than they were five years ago. These chief executives are planning to invest more abroad, and most think the U.S. trade deficit will improve by 1995. Help from the government? The majority of CEOs don't want aid, just the elimination of what they deem to be unfair trade policies, less interference, and a relationship that's more cooperative and less antagonistic. They'll take it from there.

These are highlights of the latest FORTUNE 500 CEO Poll, conducted by the opinion research firm of Clark Martire & Bartolomeo between March 7 and March 16. Respondents were 199 CEOs of FORTUNE 500 and Service 500 companies.

Why the optimism on competitiveness? Some CEOs credit greater emphasis on quality. Says Grumman's John O'Brien: "We have shaken off our lethargy. We are paying more attention to our quality, and that has made us more competitive." Remarkably, at least one industrial CEO acknowledges what many economists consider fact: that the M&A decade forced companies to become fitter competitors. Charles Casey of Constar International, a plastic container producer, says, "The main thrust has come from the financial community. Takeovers and leveraged buyouts have made many industries more efficient."

Those who feel they have slipped competitively usually blame government. W. B. Seaton of American President Cos., a freight transport firm, feels particularly disadvantaged by antitrust rules. Says he: "We have antitrust regulations that make us noncompetitive with the Japanese. We need to be able to enter into joint ventures with other American companies and attack foreign markets together." Similarly, several bankers think that restrictive legislation—such as the Glass-Steagall Act, keeping banks out of the securities business—prevents them from building muscle. Says First Interstate Bancorp's Joseph Pinola: "Banking is excessively regulated. We are thwarted because our powers are limited, while the Japanese and the Germans have freedom and are continuing to grow."

Regardless of their competitive positions, most CEOs plan to increase foreign investment by 1995. Air Products & Chemicals of Allentown, Pennsylvania, derives one-quarter of its sales from international operations. CEO Dexter Baker says, "The Pacific Rim and Europe are growing faster than the U.S., so we will probably reinvest more capital there than in the U.S."

REPORTER ASSOCIATE *Sara Hammes*

Q Compared with their Japanese and European competitors, are the U.S. companies in your industry more or less competitive than they were five years ago?

A

More	67%
Less	12%
Same	9%
Not applicable	12%

Q To stay competitive, companies everywhere are increasing investment outside their borders. Will foreign investment as a percentage of your total capital spending rise over the next five years?

A

Yes	59%
No	28%
Not sure	13%

MICHAEL KRAMSCA

"It is very important that we have a long-range vision of where this country needs to be."

GEORGE FISHER
Motorola

Of course, a large increase in U.S. investment abroad, while a sign of prosperity and aggressive competition, could temporarily worsen America's trade deficit. Some CEOs point to such statistical anomalies as reason to dismiss the panic over a trade deficit. But most say the deficit reflects larger competitiveness problems that the U.S needs to correct. Nearly half the CEOs polled expect the deficit to shrink over the next five years, from $110 billion annually to between $50

Q In 1989 the U.S. had a trade deficit of roughly $110 billion. In 1995, what do you expect the trade balance to look like?

A

More than $150 billion deficit	7%
$100-150 billion deficit	26%
$50-99 billion deficit	48%
$0-49 billion deficit	14%
In surplus	2%
Not sure	3%

billion and $99 billion. Another quarter, however, think the deficit will *rise* to between $100 billion and $150 billion a year. FORTUNE's forecasters side with the optimists, predicting a decline in the deficit. The WEFA Group of economic forecasters thinks it will shrink to $66 billion in 1995.

Q The U.S. trade deficit with Japan remains stuck at around $50 billion a year. Some argue that the U.S. should set a timetable for reducing the deficit and let the Japanese figure out how to meet it. Do you agree?

A

Yes	34%
No	59%
Not sure	7%

The most widely cited cause of the trade deficit is no surprise: It's Japan. Stanley Gault of Rubbermaid speaks for many CEOs when he says, "It is critical that the Japanese recognize that the trade deficit cannot continue. We have a right to open and effective access to their market." Michael Wright of Super Valu Stores, like many other CEOs, finds the Japanese distribution system inefficient and costly. He doesn't buy the argument that Japan's markets are fairly well open. Says he: "We run into enormous restrictions and quotas in Japan that make it difficult for the U.S. to export food there. They are a detriment to free trade."

Despite such impassioned sentiment, most of the CEOs polled favor continued negotiations with Japan rather than playing hardball to reduce the trade imbalance. Only 34% felt that the U.S. should set a deadline for getting trade into balance and leave it to the Japanese to meet it, as many in Washington have proposed. Says O'Brien of Grumman: "Drawing a line in the sand and daring someone to step over it usually doesn't accomplish anything. The Japanese will just draw another line and challenge us." F. Kenneth Iverson of steel producer Nucor echoes, "That would be American arrogance. We can work it out."

Asked what government should do to assist business, CEOs were most likely to say it should try to eliminate trade restrictions between nations and equalize those that remain. Many CEOs also thought government could improve U.S. competitiveness through several domestic policies. Among them:

Q What, if anything, should the U.S. government do to help American business compete?

A

Eliminate unfair trade policies	33%
Be more cooperative with business	24%
Interfere less	20%
Change tax policies	19%
Establish a national competitiveness policy	13%

Other responses include: Reduce the cost of capital, improve education, reduce budget deficit.

- Relax overly restrictive antitrust regulations.
- Reduce capital gains taxes and broaden research and development tax credits.
- Lower the cost of capital by reducing the budget deficit. Says Richard Ayers of Stanley Works: "I don't like the fact that the government is out there competing with business for capital. Its need for funds raises interest rates for everyone."
- Be more cooperative toward business. As Fred Bertrand of National Life Insurance says, "In Japan, government is concerned with promoting business. Here, government tends to view its job as prohibitory. The attitude of many people is, 'This is what business wants—it must be wrong.' "
- Establish a national competitiveness policy. Motorola's George Fisher believes the U.S. should give competitiveness the same status in national policy as defense and foreign relations. Says he: "It is very important that we have a long-range vision of where this country needs to be. We need a road map into the future."

Q Should the U.S. government try to assist business by encouraging more immigration of skilled workers?

A

Yes	50%
No	45%
Not sure	5%

For all the prescriptions, a significant minority of CEOs—20%—wish the government would just keep its hands off. Douglas Yearley of the Phelps Dodge mining company says, "Like any good capitalist, I am scared to death of excessive government involvement." George Kennedy of International Minerals & Chemicals puts it bluntly: "Leave us alone and stop meddling."

Nearly all the executives polled realize that America faces a shortage of skilled labor, and many praise immigration as a building block of U.S. capitalism. But they split almost evenly over whether encouraging more skilled immigrants would be a sensible part of U.S. policy. Many CEOs insist the real problem is that Americans aren't properly educated. As Upjohn's Dr. Theodore Cooper states, "I don't think importing talent from all over the globe is a suitable substitute for fixing our own education system."

Despite the worries, most of these CEOs are pumped up for the global game. For two centuries the U.S. market was big enough to absorb all the growth of virtually any company. Now the notion that the largest U.S. businesses *must* look abroad has lodged in CEOs' minds and isn't leaving. Baker of Air Products & Chemicals speaks as the archetypal FORTUNE 500 CEO: "There's only one marketplace—so my goal is to supply goods to every nook and cranny of the world." F

"If we want a world economy with the best standards of living for everyone, then we have got to eliminate trade barriers."

F. KENNETH IVERSON
Nucor

"Banking is excessively regulated."

JOSEPH PINOLA
First Interstate Bancorp

SUCCESS SECRETS OF TOMORROW'S STARS

Their products range from disk drives to old tires. What these fast-growing companies on the 500 and its fringe share is a knack for capturing new markets quickly. ■ *by Andrew Kupfer*

IF YOU AIM TO PLAY in the business big leagues, it makes sense to study the moves of the established stars on the FORTUNE 500. But don't ignore the fast-growing, midsize companies struggling to make the majors. Whether battle-scarred veterans or fresh-faced newcomers, they offer valuable lessons about what it takes to prosper against global competition.

This is the fourth year that FORTUNE has published a list of 25 of the brightest talents on the 500's fringe. Four companies from the 1988 farm team won places on this year's 500, led by Mark IV Industries of Williamsville, New York. This conglomerate, which occupies lucrative niches in more than 30 industries ranging from audio systems to traffic lights, used a strategy of expansion by acquisition to catapult to No. 409 on the list. Measured by total return to investors over the past decade, Mark IV ranks even higher: 11th among the 500.

But the hottest comer is Conner Peripherals of San Jose, California. The corporate equivalent to New York Mets fast baller Dwight Gooden, this maker of computer disk drives has been growing so rapidly that it barely paused in the minors, leaping from nowhere to No. 417 in this year's directory. In just its third year of sales, Conner earned $41 million on revenues of $709 million. No U.S. manufacturing company has ever gotten off to such a fast start, and only one—Compaq Computer—has made the FORTUNE 500 as quickly.

Like the rookies on the 500, the 25 members of this year's farm team are a diverse crew. Some are New Age computer companies that have shouldered their way to success as if born fully formed. Others are older outfits in grittier lines of work, such as making steam generators, that have gone through

MICHAEL L. ABRAMSON

An old tire casing gets a high-tech checkup at a Bandag plant in Iowa. For the king of the retread market, double-digit sales growth is the norm.

TOM ZARECHE

The computer disk drive maker founded by Finis Conner is among the fastest-growing companies ever.

midlife crises and emerged rejuvenated. Here's the common denominator: All are succeeding by outracing competitors to market and by helping customers do the same.

Consider Conner. Finis Conner, 46, the company's eponymous founder, tries to ensure success in a notoriously volatile industry by selling product ideas to a big customer *before* he designs them. In this case the customer was Compaq, which bankrolled Conner's startup to get a sure source of disk drives. Sales to Compaq, which still owns 31% of the company, accounted for 90% of Conner's revenues in 1987. By last year that share was down to just 29%, as demand surged from outside customers, including Japanese heavyweights such as Toshiba and NEC.

Before his latest venture, Conner had helped launch two other major disk drive companies, Shugart Associates and later Seagate Technology, which is now the biggest in the business. So he learned the hard way what to avoid: "Don't run out of cash, and don't ever turn down an order." To hit the ground running without running out of money, he decided to buy all components from suppliers rather than make them, and to lease assembly plants. That pinchpenny strategy helped the company show a profit in its very first quarter of sales.

To keep customers from going begging, Conner President William Almon tries to line up assembly space as much as a year before it is needed. Says he: "We have two buildings in Singapore, complete with clean rooms but with no people in them, ready to go." And when it needs to, the company can get the horses saddled quickly. Conner started looking for a European assembly site in January, found some raw factory space in Scotland at the end of February, and began installing equipment in March. By June products should be moving out the door.

Conner's keen nose for customer needs also helped him corner the disk drive market for laptop personal computers and—the latest miniwrinkle—computer notebooks (see Innovation). These have become the fastest-growing types of PC. Steven Ossad, a computer analyst with Montgomery Securities in San Francisco, predicts that the company will pass the $1 billion sales mark this year and forecasts a 65% increase in earnings per share.

Selling semiconductors has been a murderous business in recent years. Still, LSI Logic has not only survived but also made it onto the 500 by being in the right part of a rough industry. Rather than make memory chips—which are not quite as cheap as a dime a dozen, but getting there—LSI produces custom chips that perform specialized functions. By creating a software catalogue that allows customers to mix and match functions electronically, LSI lowered the time it takes to develop a new computer from an industry average of 18 months to six months. Says William Tai, an analyst with stock brokerage Alex. Brown & Sons: "They brought fast time-to-market and integration to the business, and that's what made this company."

In the early days Chairman Wilfred Corrigan, who founded LSI in 1981, spent a bundle on production lines to be ready to supply the next hot machine to sizzle out of Silicon Valley. Then the market changed. Computer makers today bring out new models more frequently and sell fewer units of each; as a result, LSI had to write off factory space last year and took a $25 million loss. To satisfy speed-obsessed manufacturers, LSI turned to "gate arrays"—semifinished chips that need just a few last-minute instructions to be customized and ready to go. With LSI now the world leader in this $2.2 billion market—the other six players among the top seven are Japanese—analyst Tai expects the company to be back in the money this year.

AFTER THREE YEARS on the farm team, La-Z-Boy Chair of Monroe, Michigan, has moved up to the No. 496 spot on the 500 list by going against its industry's grain. La-Z-Boy claims roughly 30% of the U.S. reclining-chair market and enjoys phenomenal name-brand recognition (88% in a recent poll). But unlike their parents, lazy boys and girls from the baby-boom generation tend to be couch potatoes rather than chair potatoes. So instead of sitting on its laurels, the company has been expanding into the faster-growing sofa-bed market. "I like to see how companies do in adverse circumstances," says analyst Elliott Schlang of Prescott Ball & Turben, a Cleveland brokerage firm. "Their industry is not booming, yet La-Z-Boy is setting record results."

To keep up that pace, La-Z-Boy uses computer-aided design to get products from research and development to the showroom in four months instead of ten. Automated cutting machines have helped pare worker hours per chair by nearly 20% since 1987. The company has also cut delivery time to retail customers from ten weeks to six,

REPORTER ASSOCIATE *William E. Sheeline*

with a target of four weeks by early 1991.

Another master of a mundane market weighs in near the top of the fringe list: Bandag. About 53% of the 12 million or so worn-out truck and bus tires replaced every year in the U.S. are retreads, and this Muscatine, Iowa, company has nearly half that business. What's attractive about this form of recycling is the economics: Bandag's tires cost $90, vs. $300 for a premium new tire.

BANDAG sells top-of-the-line treads, and the machines to bond them to old tires, to franchised retread shops. While its tires cost slightly more than competing brands, they last longer. That kind of quality counts, particularly overseas. Last year Bandag generated 42% of its sales abroad. Brazil, which has virtually no rail network, is a big market that could get bigger if the radical reforms launched by newly elected President Fernando Collor de Mello take root. So is Europe, where retreads account for nearly two-thirds of truck tire sales. Bandag Chairman Martin Carver, 41, who holds the world land speed record for a diesel truck (150.918 mph), also likes Turkey as a gateway to the Middle East because, he says, "the Turks are real hustlers."

But Bandag's biggest challenge is back home: Goodyear Tire & Rubber, with annual sales of more than $11 billion, has entered the retread market. To counterpunch, Bandag has developed new services, such as a 24-hour-a-day emergency hotline to get blowout victims back on the road. About 6,000 stranded truckers are dialing up each month.

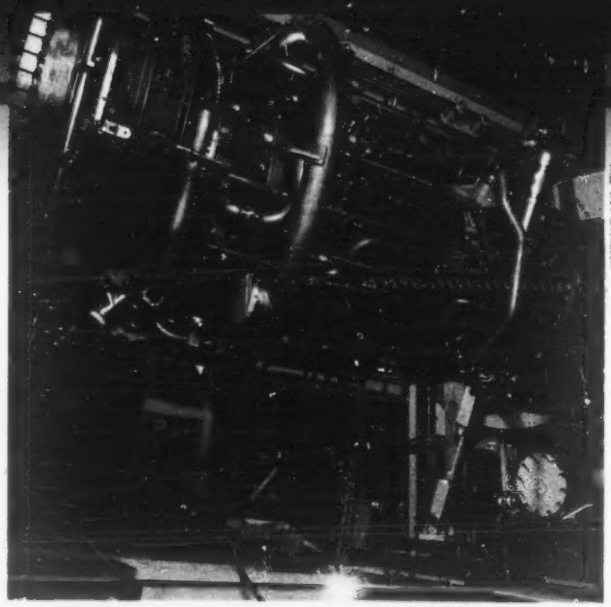
Bandag's Martin Carver likes doing business in Turkey, because "the Turks are real hustlers."

International markets have spurred the growth of Mentor Graphics, the world's biggest producer of electronic design automation systems. Mentor combines hardware from other companies with its proprietary software to allow customers to design any sort of electronic component, from integrated circuits to portable phones to communications satellites. Letting engineers set aside their pencils is nothing new, of course. But on Mentor's computer systems they can run simulations that show whether their brainstorms will work, which saves two to three months as well as the expense of building a prototype. The systems are particularly helpful for semiconductor makers, who must figure out how to cram more circuits onto a chip without increasing design time.

More than half of this Oregon company's sales are abroad. To quickly tap into regional breakthroughs in electronics technology, the company has established research-and-development facilities in Europe and Asia. In the critical Japanese market, it has gone

UP-AND-COMING COMPANIES HEADED FOR THE 500

COMPANY	PRINCIPAL PRODUCTS	1989 SALES $ thousands	1989 NET INCOME $ thousands	1986–89 AVERAGE ANNUAL SALES GROWTH
NORTHWESTERN STEEL & WIRE (Sterling, Illinois)	Steel, wire	$540,960	$18,220	15.0%
BANDAG (Muscatine, Iowa)	Retread tires	$535,159	$75,927	13.1%
JOY TECHNOLOGIES (Pittsburgh)	Mining machinery	$532,755	($11,180)	13.0%
FLS HOLDINGS (Tampa)	Steel	$532,437	$13,114	18.6%
VALSPAR (Minneapolis)	Paint	$526,892	$22,234	14.9%
BETZ LABORATORIES (Trevose, Pennsylvania)	Water treatment chemicals	$518,669	$55,860	14.5%
GOULDS PUMPS (Seneca Falls, New York)	Pumps	$515,039	($1,328)	13.1%
APPLIED MATERIALS (Santa Clara, California)	Wafer fabrication equipment	$508,435	$51,484	50.5%
PLY GEM INDUSTRIES (New York City)	Home improvement products	$506,845	$10,100	30.8%
PALL (Glen Cove, New York)	Fluid filters	$505,888	$57,681	15.1%
ALBANY INTERNATIONAL (Albany, New York)	Paper-processing fabric	$505,474	$44,492	14.5%
QUANEX (Houston)	Steel	$501,991	$29,250	15.6%
SMITH CORONA (New Canaan, Connecticut)	Typewriters	$493,077	$41,994	18.0%
ZURN INDUSTRIES (Erie, Pennsylvania)	Waste-to-energy systems	$490,746	$24,165	8.5%
HOMESTAKE MINING (San Francisco)	Gold	$488,554	$53,324	9.0%
SAFETY-KLEEN (Elgin, Illinois)	Cleaning systems for parts and tools	$478,117	$45,987	23.3%
STEWART & STEVENSON SERVICES (Houston)	Gas turbine power systems	$473,657	$20,803	20.7%
LOCTITE (Hartford)	Adhesives	$466,648	$54,476	20.5%
AST RESEARCH (Irvine, California)	Computer systems	$458,010	($7,469)	38.5%
LADD FURNITURE (High Point, North Carolina)	Furniture	$453,002	$16,747	15.0%
WYSE TECHNOLOGY (San Jose, California)	Computer terminals	$452,313	($21,192)	38.2%
HUFFY (Dayton)	Bicycles	$449,389	$14,993	18.1%
ACME STEEL (Riverdale, Illinois)	Steel	$439,412	$16,200	22.3%
STANDARD MOTOR PRODUCTS (New York City)	Automotive replacement parts	$428,857	$13,143	14.4%
MENTOR GRAPHICS (Beaverton, Oregon)	Computer-aided engineering systems	$380,034	$44,903	29.9%



WILLIAM OSTERREICH

Stewart & Stevenson's turbine systems provide power for utilities.

one step further, setting up a wholly owned subsidiary in Tokyo run by local managers.

"Some of our Japanese customers think Mentor U.S. is a wholly owned subsidiary of Mentor Japan," says Chairman Thomas Bruggere. "We don't discourage that perception." Japan is now the company's most profitable market. If Mentor keeps growing at the 30% clip it has averaged for the past three years, it should vault onto the FORTUNE 500 by 1992.

A number of this year's highfliers are profiting from rising anxiety over the environment. One is Betz Laboratories of Trevose, Pennsylvania, whose bottom line is writ in water. Big manufacturers in heavy industries, such as steel and paper, use water as an ingredient or a coolant. Betz's specialty chemicals and control devices keep water systems free of small marine creatures, mineral deposits, and corrosion.

In recent years the company has been adept at finding ways to turn the greening of America to its advantage. For example, it has begun delivering its chemicals in returnable containers to eliminate the trouble, expense, and hazard of disposing of 55-gallon steel drums. A new electronic control system warns customers when the concentration of additives in their water is wrong; users can adjust the mix from a remote computer terminal. Betz also makes de-inking chemicals and a substance that helps fibers to set as paper is remade—perfect products to ride the current U.S. boom in paper recycling.

Distaste for waste runs deep in the corporate culture. Analyst Donald Pattison of the stock brokerage C.J. Lawrence Morgan Grenfell appreciates management's eschewal of such frills as a fancy address. Headquarters lies on an unassuming macadam road near an auto graveyard. Says Pattison: "My only problem is that everyone who follows the company recommends the stock. Betz has low debt, a high return on equity, and great earnings per share growth." Great consistency too: Profit margins on sales have ranged between 10.3% and 12.4% since 1979.

Another Keystone State leader in the quest for clean energy sources is Zurn In-

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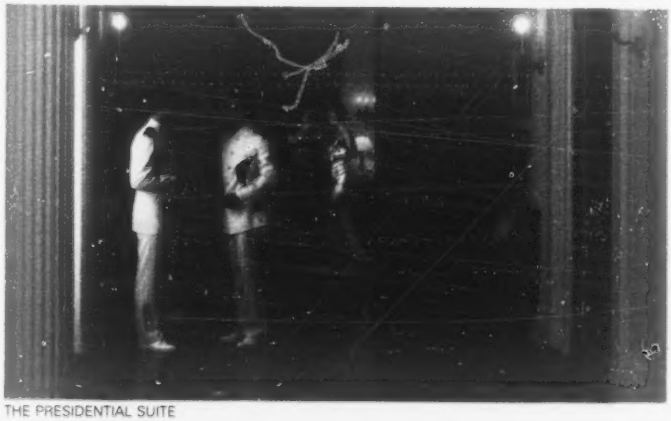

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dustries of Erie, Pennsylvania. A family firm, Zurn was essentially in the boilermaking business until the late 1960s, when brothers David and Frank went on a buying spree. They diversified into ventilator systems, sportswear, and golf clubs, among other things. The company stagnated until 1985, when the outside directors on the board forced the Zurns to resign. George Schofield, a vice president with General Electric, was recruited to take over as chief executive. He immediately began shedding unprofitable operations and steering the company into fast-growing energy and environmental businesses.

ZURN'S FORTE is developing clean-burning power plants that come with built-in recovery systems to capture waste heat. In addition, the company builds and equips power plants that run on alternative fuels, such as wood chips or old tires. "Getting permits to construct major new power stations will continue to be very difficult," says Paine Webber analyst Walter Kirchberger. "These are the ways the U.S. is going to expand its ability to produce electricity." Kirchberger predicts that Zurn can grow at least 15% a year for the foreseeable future. While its profit margins are rarely above 5%, the company has a healthy balance sheet—an essential hole card when playing poker in the high-stakes market for big capital projects.

Like Zurn, Stewart & Stevenson Services endured some miserable years during the past decade. Back in the early 1980s, one of its main businesses was building and servicing offshore oil rigs. When oil prices plunged and the rigs stopped running, Stewart lost money for four consecutive years.

Happily, the Houston company had another business: distributing diesel engines and assembling power systems. When the market for gas turbines heated up—a consequence of rising electricity demand and the scuttling of the nuclear power industry—Stewart saw its chance and pounced. Turbines are popular because they are efficient, clean burning, and easy to set up. Stewart & Stevenson is also big in electric cogeneration—using waste heat at power plants to make steam, which then drives turbines to produce more electricity.

After a decade in the dumper, Stewart & Stevenson's stock has risen more than eightfold since late 1987.

After a decade in the dumper, Stewart & Stevenson's stock has risen more than eightfold since late 1987. The company recently announced results for the fiscal year ended January 30—too late for this year's 500 list. But with sales up 28% to $604 million and profits up 31% to $27 million, it is a good bet to make next year's 500. Chairman and patriarch C. James Stewart II, 64, is the grandson of the founder; his three sons are all senior officers. Says Stewart modestly: "We think we kind of know how to shift with the times." That kind of knowledge is what it takes not just to get to the 500, but to stay there. F

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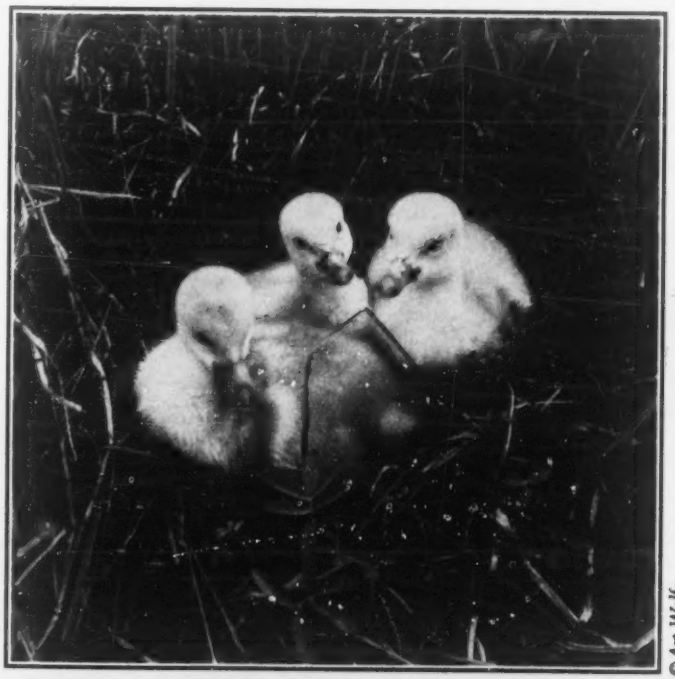

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REWRITING THE EXPORT RULES

Pushing their products and services into the global marketplace, American companies are learning how to get a piece of the action wherever and however they can. ■ *by Monci Jo Williams*

TUNA AND SWEET CORN on pizza? "Yuk," you think? If so, think again: The fish-and-farm combo is the best-selling pie at Domino's 58 pizza restaurants in Japan, ahead of pepperoni, onion and cheese, and green peppers, corn, and ham. At the 34 restaurants in Australia, the favorite is prawns and pineapple. Such oddball adornments of pizza popular in foreign markets put money in the bank for Domino's, which gets 5% of its sales from 330 restaurants in 20 countries outside the U.S.

This is the first lesson of exporting: Take nothing for granted about what people in other countries may like. Lesson No. 2 is a variation on that theme: Take nothing for granted about what you can and cannot export. What you have to sell may not be a product but an idea or a skill. Some "components" that find their way onto a Domino's pizza in Japan—pepperoni, for example—are made in the U.S. and shipped overseas. But most are produced in local markets. Domino's took in $700,000 in fees from international franchises last year—in effect, from the sale of its expertise to foreigners.

Newcomers like Domino's—it began selling abroad in 1982—have helped fuel a powerful resurgence in U.S. exports over the past several years. Exports fell by 6% during the first half of the 1980s; since 1985 they have risen some 60%. In 1988 the U.S. was just about tied with West Germany in share of world exports, well ahead of Japan, and early signs suggest that it reclaimed the lead last year.

Credit part of the rebound to the dollar's descent and to strong economic growth among America's trading partners. But American companies—many old exporters as well as newcomers—have turned aggressive about finding customers wherever they can in the global marketplace for whatever goods or services they can sell. Some have had their eyes opened by foreign competitors who have broken into U.S. markets; others looked for new business overseas when their domestic growth slowed.

Paradoxically, the new aggressiveness is often not reflected in the balance-of-trade statistics—or may even *subtract* from the export total. The reason? Many companies that might have been content to simply export a few years ago are moving faster to serve customers by setting up manufacturing and support activities in their new foreign markets.

continued

REPORTER ASSOCIATE *Sandra L. Kirsch*

In a warehouse near Los Angeles, Alcoa's beverage-can sheet awaits shipment to Asian markets.

STEVE SMITH

FASTEST-GROWING U.S. EXPORTS

		GROWTH RATE 1985 through June 1989 percent change	AMOUNT July 1988 through June 1989 in billions
1	Music, video, and computer tapes; floppy disks	32.3%	$2.5
2	Cigarettes and other tobacco products	30.4%	$3.2
3	Meat	30.0%	$2.7
4	Pulp and wastepaper	27.1%	$4.1
5	Synthetic resins, rubber, and plastics	27.1%	$7.9
6	Electronic components and parts	25.0%	$11.5
7	Electromedical and radiological equipment	23.3%	$2.7
8	Electrical machinery and equipment	19.8%	$4.9
9	Timber	19.3%	$2.3
10	Animal feeds	19.0%	$3.4

OFFICE OF TRADE INFORMATION AND ANALYSIS, DEPT. OF COMMERCE

That's lesson No. 3 for exporters: Think like a global competitor. As the world's economies become increasingly intertwined, where you make a product is less important than ensuring that you get your share of the action as the product or service wends its way along the chain from conception to consumption. The Aluminum Co. of America sells its beverage-can sheet—the stuff used to make soda cans—all over the world. Some of that sheet is made in America, but part is made in Britain, and some more in Australia. Says Ronald R. Hoffman, a group vice president: "If a company really is a global competitor, it is going to be shipping all over the place from all over the place."

Alcoa offers the fourth lesson as well: Beat your best competitor on quality. Last year it shipped about 110 million pounds of beverage sheet to Japanese canmakers from plants in Tennessee and Indiana, capturing 10% of the market in Japan. Now it is gearing up to take advantage of fast-growing beverage sales elsewhere in the Far East and in Europe.

Alcoa developed its thriving export business only after getting whacked with what Hoffman calls a "cold towel in the face" by the Japanese. In 1980 the company was finishing a record year of earnings when the first Japanese competition arrived on American shores. The Japanese were selling sheet for 8% to 10% less than Alcoa and other American manufacturers. "But what our customers really applauded was the quality," says Hoffman. Rolling their sheet on equipment similar to Alcoa's, the Japanese were getting a cleaner surface finish, fewer imperfections, and a greater tolerance for high-speed canmaking processes.

AT FIRST, says Hoffman, Alcoa refused to recognize the competitive threat. "We denied reality. We convinced ourselves that the Japanese were handpicking coils of aluminum sheet to break into the U.S. market. But it didn't take a New York minute for us to figure out that we were going to get nailed over the next few years if we didn't follow up."

To help employees step out of the twilight zone of denial, Alcoa managers took a coil of the Japanese sheet to the rolling plant in Newburgh, Indiana. They cleared a space in the middle of the factory floor, unrolled the coil, and left it there for two weeks. "You could not get through the factory without encountering the Japanese sheet," Hoffman says. The message: If they can do it, so can we.

Alcoa committed $800 million to upgrade and stuck to its modernization plan, even though earnings fell over the next few years as excess capacity flooded world markets. "We laid a lot of money out when not a lot of money was coming in," says Hoffman. "Now we have a profitable, noncyclical business in a market that has taken off."

American ingenuity is still alive and well, and many companies become exporters simply because they've built a better mousetrap. Rad Elec, a tiny, three-year-old company headquartered in Frederick, Maryland, sells radon test kits with a technological edge. Conventional kits use charcoal to absorb radon gas; customers must send the tester off to a laboratory for analysis. Rad Elec's monitor uses an electrostatically charged Teflon wafer to measure the ions floating around in the air when radon decays, so users can get their readings at the site. The result, says Rad Elec, is that its kit is cheaper, faster, and more accurate than competing systems. An import-export outfit got wind of it, approached the company about representing its product, and is now exporting to Sweden and Canada. The next target: Britain.

Most exporters, however, must fight their way into the marketplace. Some make contacts with customers by attending trade shows; some go on export-development tours that the Department of Commerce or state and local governments put together. Anadigics, a small electronics outfit in Warren, New Jersey, opened up new markets by putting on what amounted to its own private trade shows all over Europe.

And so we reach lesson No. 5: Aim at customers who want what you have, and then hustle, hustle, hustle. Anadigics makes gallium arsenide integrated circuits. The gallium arsenide chip was originally developed for use in high-speed computing and defense electronics, but the technology has yet to be perfected for use in computers. Anadigics had planned to offer its chips to mak-

Gallium arsenide chips made in New Jersey by Anadigics Inc. will end up in European satellite dishes.

RICHARD FLYNN

ers of electronic weapons systems, but that market dried up when the U.S. cut defense spending. So the company took off in a different direction, designing the first generation of gallium arsenide chips for use in consumer electronics products and broadcasting. It makes the chips in New Jersey and ships them to London.

There British Satellite Broadcasting, a competitor of Rupert Murdoch's direct broadcast satellite system, installs them in its dishes to receive the programming signal. The Anadigics chip replaces up to 40 components, so the electronics systems on BSB's satellite dishes are cheaper and smaller than in earlier direct broadcasting systems. Anadigics got British Satellite as a customer through seminars it was conducting in Europe for electronics companies—it was offering either to make chips or to hire out its U.S. manufacturing facilities to companies that wanted to design their own. One attendee, Britain's Continental Microwave was readying a bid to manufacture the electronics systems for BSB's satellite dishes and concluded that the Anadigics chips were just what it needed to win *its* prospective customer.

Lesson No. 6: Play every angle you can. Anadigics captured other European customers by capitalizing on a phobia Europe's consumer electronics companies, many of which have experimented unsuccessfully with gallium arsenide technology, believe they are in a duel to the death with the Japanese. Figuring that they would be delighted to have a non-Japanese supplier, Anadigics packaged itself as the alternative to doing business with the enemy. Two companies that sent representatives to Anadigics seminars, France's Thomson-CSF and Holland's N.V. Philips, later bought small stakes in the company to ensure future chip supplies. Yet their investments do not preclude it from selling in the Far East. Anadigics has signed up a Japanese distributor that is now showing prototypes of the gallium arsenide chips to Japanese electronics companies.

TOM ZIMBEROFF

Oracle Corp. exports software from Belmont, California, to a growing list of over 90 countries.

Typically, companies used to nail down the home market before they began exporting. Now many are moving abroad earlier. Lesson No. 7, from William Delphos, president of Venture Marketing, a consulting firm in Washington, D.C.: "In today's hotly competitive global environment, companies cannot afford to wait to export."

Oracle, a software maker in Redwood City, California, thought global from its inception in 1977 and has grown rapidly as a result. It earned $82 million in fiscal 1989, which ended in May, on revenues of $584 million. (For the first half of fiscal 1990, earnings were up 66% and revenues 87%.) About half the sales came from exports. Oracle's primary markets are Western Europe, Canada, and Australia, but the company also has growing businesses in the Far East, and offices and distributorships in such far-out places as Dubai and Zimbabwe. It has customers in over 90 countries so far, including Poland, Hungary, and Czechoslovakia, and is working on sales to the Soviet Union.

The software Oracle makes lets a company design and graft computer applications—an accounting or electronic-mail system, for example—onto its existing computer operating system. Its benefit is what the data-processing world calls portability. Oracle software can be run on personal computers, minicomputers, and very large computers throughout the same company, so that customers don't have to write a new program for each kind of machine.

ORACLE ALSO provides lesson No. 8: Show your customers you're in their market to stay. Companies don't want to deal with exporters that are just cruising through to pick up a little extra revenue. When Oracle was in its corporate infancy, it exported through distributors. That strategy is often a low-cost necessity for a new company short on cash. But as export sales grew, it bought out the distributors and established its own offices in major export markets. "Every time we made a transition from a distributor to a subsidiary, we saw a substantial increase in sales during the next six months," says John Luongo, senior vice president of the company's international division. "Our visible commitment to the market made all those fence-sitters get off the fence and buy Oracle."

Exporting during the early stages of your product's or company's life cycle brings other rewards. What you learn in foreign markets may prove useful as you build your business elsewhere—even at home. In Oracle's early days its British distributor wanted to offer service as part of a package with the software it sold. Oracle gave the distributor the go-ahead, found that the bundled approach helped sell its software, and made service a key part of its strategy in the U.S. too. Says Oracle's Luongo: "If you define your market in the beginning as being the world, then the rest of the world will help you get your house in shape."

And that is the overarching lesson for exporters who are joining the global battle: Competing today means more than establishing yourself here, there, and everywhere. It means *learning* everywhere—and using what you learn everywhere else. F

GET READY FOR THE NEW WORK FORCE

If demographics are destiny, companies that aggressively hire, train, and promote women and minorities—the growing segments of the U.S. labor market—will succeed. ■ *by Joel Dreyfuss*

HAROLD EPPS, who runs the Digital Equipment Corp. plant that makes computer keyboards, manages the work force of the future. The Boston factory's 350 employees come from 44 countries and speak 19 languages. When the plant issues written announcements, they are printed in English, Chinese, French, Spanish, Portuguese, Vietnamese, and Haitian Creole.

According to the Bureau of Labor Statistics, annual work force growth in the U.S. will slow dramatically, from 2% a year for the 1976–88 period to 1.2% for the span between 1988 and the year 2000. That's because the bulge of baby-boomers are aging, with no boomlet of new workers behind them. Only 32% of the new entrants will be white men. Their share of the total labor force will shrink from 51% in 1980 to 45%. Women will make up about 47% of workers, and minorities and immigrants will hold 26% of all jobs, up from 22% now.

The buzzword for recruiting, training, and promoting this new rainbow coalition of workers is "managing diversity." It has become an urgent issue for top executives, as well as a growing business for consultants. Companies from Goodyear to Hewlett-Packard to Procter & Gamble are hiring managers with "diversity" in their titles. Conferences on the new work force are rife, and consultants' practices are booming. Says Jill Kanin-Lovers, a vice president with management consulting firm Towers Perrin: "For the first time at many companies, human resources is a strategic issue."

To survive the population shifts and to prosper amid them, companies are training workers to be more tolerant of language and cultural differences, to identify and re-

The ethnically diverse workers at the Miami airport know where their children are. They go to this learning and day care center at the airport.

PHOTOGRAPH BY BRIAN SMITH

In Hartford, Aetna Life's Badi Foster trains inner-city residents to be clerks and word processors.

ject any racial and sexual prejudices, and to be more accommodating to the handicapped. Corporations are also launching literacy programs, allowing more flexible work schedules, and providing child care—even in such unlikely places as the Miami airport. The object: to keep workers happy—sometimes just to keep them. Says James E. Preston, CEO of Avon: "We understand that managing diversity is not something to do because it's nice but because it is in our interest."

That's exactly what makes managing diversity different from affirmative action. While government pressure can be shrugged off—federal law requires companies only to make a good-faith effort to hire minorities and women—demographics cannot. The shrinking work force gives the diversity issue a level of urgency that affirmative action never had.

CORPORATE affirmative action programs, which aim to correct the past exclusion of women and minorities, have brought people through the door. But many companies concede that they have not done enough to move these people up the management ranks. According to the Equal Employment Opportunity Commission, the percentage of managers who are women has grown from 17% in 1978 to 27% in 1988 (vs. 67% for white men). Minorities have moved even more slowly, from 7% to 9.5%.

Still, affirmative action of the Seventies can be a springboard for the broader work force issues of the Nineties. Says Roosevelt Thomas, president of the American Institute for Managing Diversity in Atlanta, a consulting firm that is affiliated with Morehouse College: "Affirmative action addresses issues in a temporary way, providing some short-term relief against discrimination. Managing diversity deals with why we have these problems and how we make the system work for everybody."

King-Ming Young is the project manager for the Managing Diversity Program at Hewlett-Packard, whose U.S. work force is 19% minority and 40% female. "Managing diversity has given affirmative action a new vitality, new objectives, and new language," she says. "The focus of diversity is not on women; it is on the interface between women and men. It is not on blacks; it is on the interface between blacks and whites. In the past the attention was on minorities as a *problem*, on women as a *problem*. Now people should not be stuck with being blamed or feeling guilty."

TO MANAGE the changing work force successfully, consultants contend that companies must revamp their corporate cultures. How? By exposing and deflating negative assumptions about minorities and women, changing the ways workers relate to one another, and transforming some relationships with suppliers and customers. Says Thomas: "Diversity is a way of doing business." Here are some of its principles.

■ **Cast a wide net for workers—that's the only way you'll get enough.** Procter & Gamble says it has been able to recruit minority and women engineers at a higher rate than they are represented at the undergraduate level (10% for minorities, 15% for women). How? By doing what other companies do—sending current em-

In Los Angeles, Avon representative Micaela Marti makes a call. Urban areas are Avon profit centers.

ployees to recruit on campus—but with greater effort. Some companies try to get to minority talent even sooner. McDonald's provides summer corporate internships and year-round restaurant management programs for minority college students. The young people learn about the company while they get valuable job experience—and managers can look prospects over before they make an offer.

In the seller's market, what prospective employees hear about your place becomes very important. "Companies that don't have a reputation for a level playing field are going to have a tough time recruiting," says Avon CEO Preston. Xerox gives minority prospects reprints of a *Black Enterprise* article rating the company as one of the best places for blacks to work. Hewlett-Packard talks to women candidates about its high rating as an employer in *Working Women*. The companies say that such magazine endorsements—and word of mouth—help recruitment.

To draw mothers and retirees into the work force, many McDonald's and Burger King outlets offer flexible hours. Connecticut's Union Trust Bank solved its 70-branch teller shortage by tailoring a schedule for mothers of young children so that they can have school holidays and summers off.

National Medical Enterprises, one of the largest hospital companies in the U.S., recruits nurses from Ireland and Scandinavia but still has a tough time filling all its jobs in the U.S. Company officials heard that many Chinese health care workers learn English as part of their training. After nine months of negotiations, interrupted by the revolt in Tiananmen Square, 25 Chinese began working at nursing homes in the Boston area last fall. Under an agreement with the Chinese government, the workers will spend 18 months in the U.S. before returning home. Alan Ewalt, a senior vice president at National Medical Enterprises, says the company is so pleased with the results that 35 more Chinese will be coming this year.

■ **Learn to recognize and appreciate individual differences.** The old ideal of a monolithic corporate culture is out. Greater tolerance of differences is in. "With the changing demographics, there's no way companies can impose an Anglo male culture," says Lewis Griggs, a Stanford MBA and co-founder of Copeland Griggs, a firm that produces videos on cultural issues both domestic and foreign. Says Jesse T. Williams, a vice president at Goodyear: "Managers are going to have to learn more about women, more about minorities."

Copeland Griggs has produced a series of seven 30-minute videotapes titled *Valuing Diversity* with funding from 50 corporations, including Hewlett-Packard, Xerox, US West, and P&G. Hundreds of companies and organizations have bought the tapes (at $600 for each title), and many have used them in training sessions. Through interviews with corporate executives and dramatizations, the tapes convey the message that all sorts of people make up corporate life; don't prejudge them; listen to their ideas; make sure they're a part of your formal and informal networks. Workers from various backgrounds and ethnic groups may have unorthodox styles and different values, but they also bring fresh ideas and perspectives that can help your business.

In one scene, an Asian American employee makes a pitch for a managerial job. When his boss asks him why he should get the position, the employee becomes vague and uncomfortable. The boss interprets his hesitation as a lack of aggressiveness. The narrator explains that many Asian cultures consider chest-beating unseemly. His suggestion: The manager should monitor the applicant's work to see if he can handle promotion.

Some of the tapes try to show how to recognize stereotypes. The narrator asks the viewers what they assume the topic of conversation to be when they see a group of blacks or women or white men talking in the office. If the respondents said that the blacks were talking sports, the women were discussing their families, and the men were settling work issues, they would be wrong. As the camera moves within earshot, the black and women employees turn out to be discussing business matters, while the white men are talking about their families.

The tapes suggest that the successful manager will have to navigate through individual sensitivities and cultural pitfalls. If that sounds overdrawn, consider again the polyglot DEC keyboard plant. When a young man from one country tried to give a present to a female co-worker from another, mutual misunderstanding precipitated a crisis on the shop floor. In the man's culture, accepting the gift signaled a romantic interest. The woman didn't share his feelings, but her society considered turning down a gift an unforgivable act. Plant manager Epps says supervisors had to explain the missed signals to both parties to defuse tensions. *continued*

King-Ming Young manages diversity programs for Hewlett-Packard.

DOUG MENUEZ

PAT DAVISON

US West's MacAllister, here with some top managers on retreat in Tucson, champions "pluralism."

■ **Be willing to train—you will be happier with the new workers' performance and they will be more loyal to you.** After applications for clerical jobs dropped more than 40% in a year, Aetna Life decided to train its own filing, word-processing, and secretarial employees. The Hartford company launched classes for inner-city residents in basic office skills at its Aetna Institute for Corporate Education in 1988.

The crash courses in clerical and analytic skills can last up to 14 weeks. Applicants, who tend to be 19 to 27 years old, need to pass an aptitude test to be accepted in the program and must be able to do basic math, write a memo, and compose a business letter by the time they finish. Aetna has hired all 47 who have completed the course. (One person dropped out.) Badi Foster, a former professor at the Harvard School of Education who runs the institute, warns that programs like his can't make up for the educational meltdown of the inner cities. "We're dealing with the cream of the crop," says Foster of the black and Hispanic men and women selected. "They've got to be drug-free and have positive self-esteem. If they have kids, they have someone taking care of them."

Donald Stewart, president of the College Board, expects companies to shift more and more of the $80 billion a year they spend on training to remedial education—that is, helping workers learn to read and write. Ford spends over $200 million a year on a variety of remedial and in-house training programs.

■ **Once you land those hard-to-get workers, learn to keep them.** Corning found that between 1980 and 1987, black and women professionals left the company at roughly twice the rate of white men. Chairman Jamie Houghton appointed teams to figure out why. Corning's management committee declared that retaining workers would become an integral part of the company's highly regarded quality-control effort and put group president Richard Dulude in charge as the company's first equal employment opportunity executive. Last year Corning started a diversity training program for managers and professionals to sensitize them to issues of race and gender. The company says that the attrition rate for both blacks and women has declined.

Digital Equipment also found itself more successful at attracting minorities and women than at keeping them. But its team-building programs have helped show each person how valuable he or she is to the entire enterprise. The company assigns a trainer for perhaps ten weeks to a "core group" of eight people who work together on projects or assignments. The trainer puts the group through a series of exercises that try to teach them to trust one another. In one exercise one employee blindfolds another and guides him around the building. DEC won't provide any specifics but says the program has improved the productivity of both manufacturing and field sales groups. (Many companies refuse to share their successful diversity management techniques—they consider them competitive information.)

Avon encourages employees to organize into black, Hispanic, and Asian networks by granting them official recognition and providing a senior manager to act as mentor. These groups help new employees adjust and provide direct feedback to management on problems that concern the groups. For example, when the Hispanic network decided its members needed a leadership seminar, the head of the group went to the chief of human resources to get it. Preston meets at least once a year with each employee group.

The cosmetics company once had a women's network, but it disbanded years ago. With women holding 79% of management positions at Avon, the group became unnecessary. Says Preston: "My objective is an organization where people don't feel a need for a black network, a Hispanic network, or an Asian network, just as women decided they didn't need their network."

Providing child care is one way to keep women employees—and some men too. When AT&T settled its negotiations with its major unions last year, a key clause in the agreement was a comprehensive family care package that included a $5 million allocation to explore ways to provide community-based child care. Drugmaker Johnson & Johnson is building its first on-site day care center in New Jersey. The building, designed by architect I. M. Pei, will accommodate 200 children and include an isolation ward for sick youngsters. Retailer Dayton-Hudson is spending $8 million to help train home care providers so its employees can hire qualified, responsible babysitters. The company expects to train 8,000 over a three-year period.

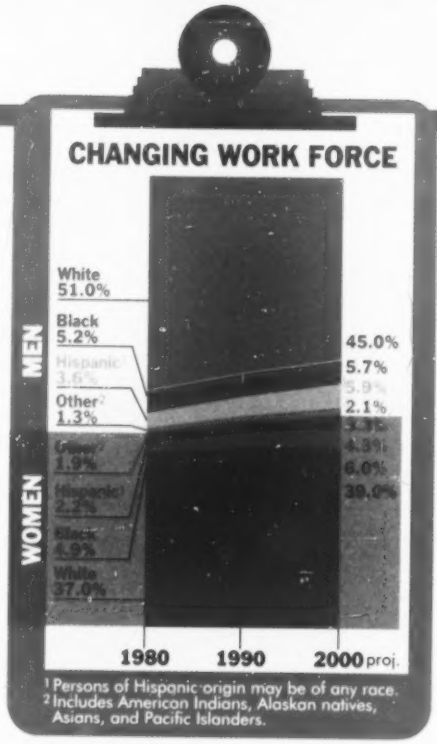
IBM recently committed $25 million to child care and elder care programs. Most of it will go to increasing the number and quality of child care providers in communities where IBM workers live. Citing "the chang-

REPORTER ASSOCIATE *Sara Hammes*

ing social environment," Chairman John Akers said his company wanted to give employees the flexibility to "advance their careers while minimizing the impact on their personal lives."

New York City schools chancellor Joseph A. Fernandez has proposed putting satellite learning centers on corporate premises so parents can be close to their children. Fernandez experimented with the concept when he ran the schools in Miami. One center he set up at the Miami airport has a kindergarten, a first grade, and a day care center. Spokesmen at the center say that parents act as teachers' aides during their time off.

A satellite school at the American Bankers Insurance Group headquarters in downtown Miami not only keeps employees, it also helps recruit them. Philip J. Sharkey, a senior vice president, claims that 25% to 30% of American Bankers' employees said they accepted jobs there because of the satellite school and day care center. Among workers with children at the satellite school, absenteeism has been cut 30% and job turnover has been reduced 4% to 5%.



As the growth of the U.S. labor market slows, women and minorities, particularly Hispanics, show the strongest gains. White males will make up only 45% of workers in the year 2000.

■ **Don't forget the new work force at promotion time.** Xerox identifies "pivotal jobs" that lead up the corporate ladder and tries to make sure that women and minorities get a shot at them. This widens the pool of eligible candidates when openings occur. And it makes for impressive recruiting. Xerox has 26 black and 17 women vice presidents, out of 270. A. Barry Rand, the black president of Xerox's U.S. marketing group, is one of the six senior executives who report directly to CEO David Kearns.

At P&G every management employee gets a regular career assessment: what skills he or she needs, how and where to get them, and what that employee's next job should be. When the company noticed high turnover among black and women managers at a plant in Georgia, it set up a mentoring program that paired 23 minority managers with a senior employee of their choosing. P&G says the tactic reduced turnover considerably. Robert E. Cannon,

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And how does Ford envision the *future* in big trucks?
We see rigs with one smooth line between tractor and trailer.

Ford TRUCKS

the senior vice president who oversees diversity programs at P&G, says that career planning is the test of a company's rhetoric about diversity—"It's where the rubber meets the road."

■ **Be prepared to bend your rules.** McDonald's encountered a puzzling problem: Some inner-city teenagers would work a few months and then quit. San Francisco consultant Ronald B. Brown investigated and found that many kids worked toward a specific goal (new clothes, a boom box, prom costs) and then stopped working.

The company began to focus on ways to make the jobs more attractive—even more fun. In some parts of the country, franchise operators have allowed workers to pick the music in work areas and changing rooms. They also let the youngsters wear school sweatshirts or their own clothes on certain days instead of the maroon-and-white uniform. Pat Harris, staff director of affirmative action at McDonald's, says the company and its independent operators are satisfied with the results so far.

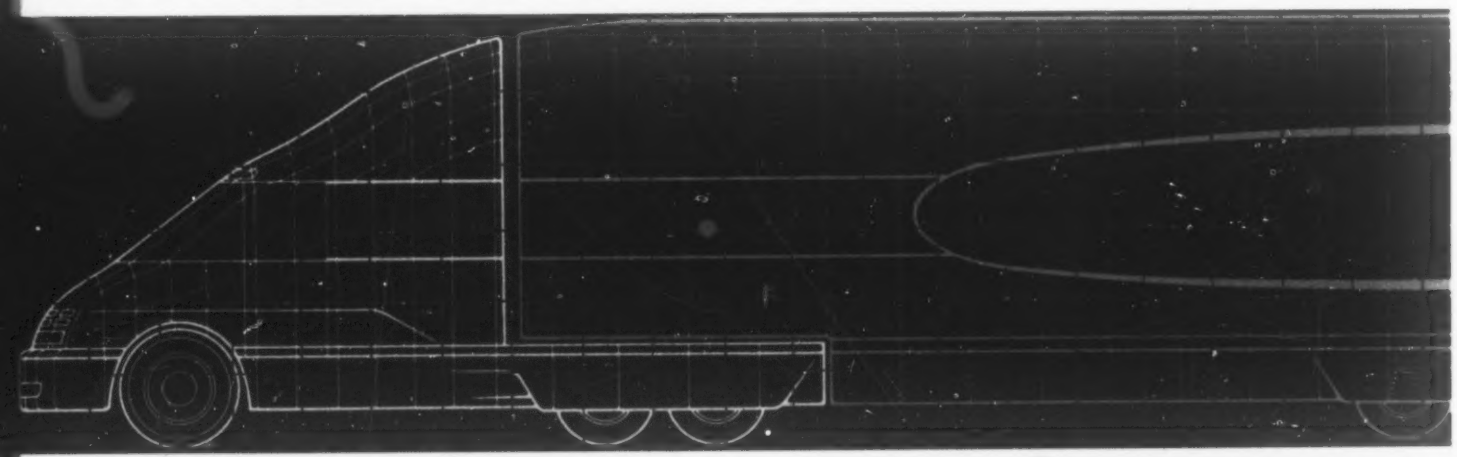
■ **Successful diversity programs need strong commitment from top management.** Xerox Chairman Kearns, Avon's Preston, and US West's Jack MacAllister, among other top executives, preach the connection between diversity and success. When some managers at Xerox wondered whether the Reagan Administration's free-market policies were a sign that they could back off corporate affirmative-action targets, Kearns sent out a strong memo reminding his managers that the diverse work force remained a business goal.

MacAllister has supported what he calls "pluralism" ever since he saw discrimination against a black teammate on his college football team. Says he: "The marketplace today is a diverse one. To be competitive, our work force needs to be diverse as well." According to company officials, 21% of the 300 or so highest-paid executives at US West are minorities and women. MacAllister, whose telecommunications company covers several Southwestern states, contends that having a Hispanic as head of his small-business operation means that the burgeoning Hispanic market won't be ignored.

Avon's Preston can illustrate both the pitfalls of homogeneity and the benefits of a diverse staff. In the 1970s Avon slipped badly, he says, because its mostly male management staff failed to notice the massive shift of women customers from the home to the office. By handing unprofitable inner-city markets over to black and Hispanic sales managers, Avon turned that business around. Now, says Preston, "the most productive markets for us in the U.S. are in the inner city."

FOR 20 YEARS U.S. corporations, pressed by law and conscience, have made uneven progress toward integrating their work force. Now globalization, a shrinking labor pool, and the evolution of ethnic markets at home have further spurred the process. In the rest of this decade and beyond, the companies that come out on top will be those that have learned to attract—and keep—the best workers in the rainbow of talent. F

...and Tomorrow's.



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STRONG MEDICINE FOR HEALTH COSTS

Companies feeling blue—or in the red—over feverish employee medical expenses have found some relief. Just take an HMO and add a twist.

■ *by Edmund Faltermayer*

WHAT ARE NOW EQUAL to half of all pretax profits and rising fast? Answer: company health benefits. No wonder managers are desperate. And no wonder many of them are marveling at a plan adopted by one big outfit to cut the costs after its own bill spurted 39% in 1987.

Allied-Signal, the aerospace and automotive parts maker in Morristown, New Jersey, made an innovative deal with Cigna, the Philadelphia insurer. Cigna took over the health care of all Allied's non-union employees and guaranteed to hold cost increases to single digits. Result: Cigna, which ran a nail-biting risk, is making good money on the deal. More important, total health costs for employees in Allied's new plan rose last year by a mere 4%.

What Cigna did was simply add a new twist to the old health maintenance organization. Ordinary HMOs, designed to hold down costs, charge fixed annual fees for each member. Patients can see their HMO's doctors—and only them—at no cost or for minimal extra fees. But in Cigna's system, known as the open HMO, or point-of-service system, patients are also free to go *outside* the HMO whenever they need care. In that case, the plan still pays, but only 80 cents on the dollar and only after the year's expenses exceed a fairly stiff deductible. This feature attracts those who might otherwise reject being locked into a limited network of doctors and hospitals. Yet once in the plan, employees rarely use the option to stray outside.

When participants stick with the HMO, they start by seeing one of its "primary-care physicians," the present-day counterparts of the traditional family doctor. Their mission: to treat as much as possible and to act as gatekeepers, barring excessive tests, visits to specialists, and hospitalizations at up to $2,000 a day. This, of course, can substantially reduce costs.

REPORTER ASSOCIATE *Rosalind Klein Berlin*

Enlisted to reduce waste: family doctors like Phoenix's Glen Stockton, with Monica Guzman, 3½

PHOTOGRAPH BY STEVE SMITH—ONYX

The open HMO has excited so many companies that last November their benefits managers all but broke down the doors to an unpublicized two-day meeting in New York City organized by Allied-Signal to share its experience. On hand was Dr. Paul M. Ellwood Jr., a longtime reformer of the system who heads a Minneapolis medical-research organization called InterStudy. Says Ellwood: "Two-thirds of these companies will be doing the same kind of thing in three years." Employers offering plans like Allied-Signal's, or well along in preparations, include May Department Stores, Marriott, Intel, and Sears.

A few years ago Southwestern Bell's health costs per employee were rising as much as 20% annually. Then the company offered everyone, except those in rural areas and small towns, a point-of-service plan run by Prudential. Last year the increase was considerably less than 10%. For employees using Procter & Gamble's similar plan set up by Metropolitan Life, the annual increase has plunged from 15% to a bit more than 6%. Says Lawrence B. Leisure, head of group benefits at the Towers Perrin consulting firm: "The train is coming down the track in the direction of point of service."

If so, the HMO movement may get a new

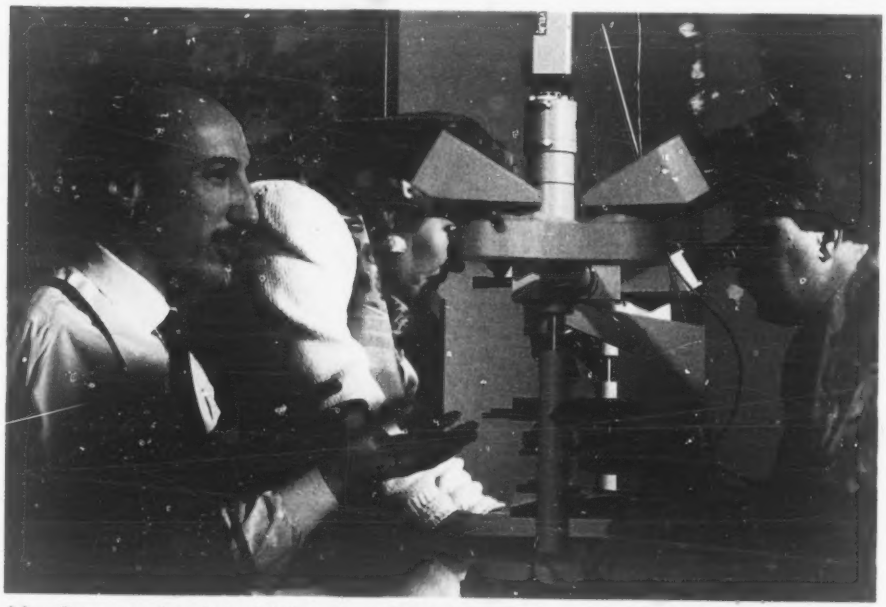
burst of speed. Membership tripled to 32.5 million in the 7½ years through mid-1989. But according to InterStudy, traditional HMOs grew only 1.7% in last year's first half, while membership in the open variety leaped 14%, to 700,000. Independent HMO companies—those not owned by insurers—are just now designing or testing open-ended versions. But Prudential and Cigna are on a tear.

In ten years, predicts G. Robert O'Brien, head of Cigna's employee benefits business, more than half of all U.S. workers in company health plans will be in HMOs, up from about one-fifth today. Most of the growth, he says, will be in open-ended plans.

Cigna has been aggressively investing in new HMOs, which take about four years to break even. Its HMOs lost $139 million after taxes in 1988, O'Brien says, but only $35 million last year. He promises a profit in 1990. Cigna has just agreed to pay $777 million for Equicor, a joint venture of Equitable Life and Hospital Corp. of America. By adding Equicor's 450,000 HMO members to its own 1.5 million subscribers, Cigna will widen its lead over Prudential as No. 1 among commercial insurers. Also betting heavily are Aetna and Lincoln National.

With so many companies selling the new plans—and good numbers coming from Allied-Signal and others—it seems premature to call for national health insurance. A year ago many corporate chiefs, particularly heads of smokestack companies with more than their share of retirees drawing medical benefits, began clamoring for a government takeover. But this amounts to abandoning hope that competition will ever rein in health costs, and invites the price controls—and possibly rationing—that a government program would bring. Medicare, the federal program for the elderly whose costs have rocketed in the past decade, has already imposed price controls. "If anything is going to save us from national health insurance," says Craig Campbell, chief of benefits planning at Southwestern Bell, "it will be a form of managed care."

The term refers to the array of systems for financing the health costs of employees without giving them carte blanche to spend what they like, as under the still-widespread "indemnity" system (see table). But what if the impressive savings from point of service turn out to be just another pause before the trip on the double-digit escalator resumes?



NINA BARNETT

A free Pap smear, here being jointly analyzed for the Harvard Community Health Plan, cuts expenses.

AMONG DOCTORS, doubters are easy to find. "It's foolish to expect to control health care costs through competition," declares Dr. Arnold S. Relman, editor of the *New England Journal of Medicine*. The problem, he says, is that the suppliers of health services—doctors—are uniquely able to influence demand. The best way to get a grip on costs, Relman argues, is to develop improved "outcomes" data that tell which operations and tests work best and which are wasteful or risky. With that kind of information, the medical system will be able to heal more efficiently and safely than now.

Yet there's no denying that the more closely health costs are managed by insurers or health networks, the lower the premiums and the slower the inflation. Precisely why comes clear from comparing managed care's three basic forms.

■ **UTILIZATION REVIEW.** Only a decade ago nearly all group health insurance provided simple "indemnity" reimbursement: Insurers unquestioningly paid any bill that was not fraudulent. More and more they watch what doctors do in the hope of inducing them to save where they can. In the early Eighties company health plans began requiring prior approval of hospital admissions, except for emergencies. But medical care is like a balloon: Squeeze it here and it bulges there. As hospital stays declined, outpatient treatment surged. So like cops with radar to catch speeders, insurers and others cranked ever fancier software into their computerized claims-processing systems to catch overtreating and overbilling.

The scrutiny at Metropolitan Life's national claims analysis center in Westport, Connecticut, has a touch of the Orwellian. Computers crunch hospital data to spotlight inefficient institutions. Outpatient bills are screened for services beyond what the diagnosis calls for, and for "unbundling"—boosting the tab by charging separately for services that normally are billed together. Just one example: The computers kicked out a claim for a follow-up visit by a patient with hypertensive heart disease. The bill ought to have been about $60, but unnecessary tests and unbundling ran it to $615. The bill was bounced back to both doctor and patient.

Even a small percentage reduction in huge company health costs can send megabucks to the bottom line. Dr. Arnold Milstein of the Mercer Meidinger Hansen benefits consulting firm is in charge of evaluating some 200 utilization review programs, which he calls "persuasion machines" for influencing physician behavior. The best programs chop 5% to 8% from a company's health costs, he says. Alas, these are one-time savings. Thereafter, a company is back on its old inflationary curve, though at a lower base.

■ **PREFERRED PROVIDER ORGANIZATIONS.** Need a coronary bypass? A network called Capp Care can get it for you wholesale—$26,600, vs. a more typical $50,500.

continued

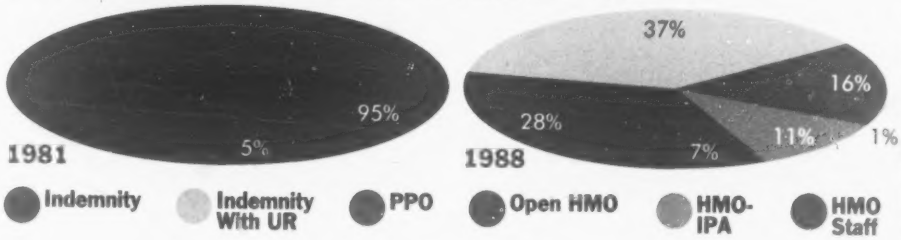
MANAGED MEDICAL PLANS SAVE MONEY . . .

TYPE OF PLAN	WHAT IT OFFERS	METHOD OF COST CONTROL	ADVANTAGES TO PATIENT	DISADVANTAGES	MONTHLY PREMIUM* Annual inflation rate
LESS COST CONTROL	Services from any doctor or hospital	None except screening for fraudulent claims	Choice of any doctor or hospital	Claim forms to file; preventive services not covered	
	Services from any doctor or hospital	Prior approval required for hospitalization and certain outpatient procedures	Choice of any doctor and access to any hospital, after prior approval	Additional paperwork to get approval of some services; preventive services not covered	
	Services from any doctor or hospital, but at lower cost to employee using network	Discounts negotiated with hospitals and doctors; prior approval required for hospitalization and some outpatient procedures	Higher rate of reimbursement within network	Lower reimbursement outside network; additional paperwork to get approval of some services; preventive services not covered	
	Services from any doctor or hospital, but at lower cost to employee using network	Within network, family doctors manage utilization of services; hospital and physician fees are discounted	Within network, lower co-payments; preventive care covered; no claims forms	Higher cost for services outside network	
	Services from any hospital or independent doctor affiliated with HMO	Family doctors manage services; hospital and physician fees are discounted	Low co-payments; preventive care covered; no claim forms	Must use approved doctors and hospitals	
MORE COST CONTROL	Services from hospitals under contract with HMO or salaried doctors at its medical centers	Family doctors at HMO medical centers manage services; hospital and physician fees are discounted	Low co-payments; preventive care covered; no claim forms	Must use medical center doctors and approved hospitals	

SOURCE FOR TABLE AND CHARTS: CIGNA CORP.

* Nationwide average family premium paid to insurer, including any portion paid by employee.

. . . AND ARE WINNING MARKET SHARE



Cigna's spectrum of health plans (table) shows that as managerial control tightens, costs and the anticipated inflation rate shrink impressively. In 1981, aside from a small number in staff, group, and other HMOs, all U.S. workers were in unmanaged "indemnity" health plans; today fewer than half are.

Based in Fountain Valley, California, Capp Care is one of dozens of preferred-provider organizations (PPOs) that sprang up in the mid-Eighties when employers and federal medical programs found groups of hospitals and doctors willing to cut prices in return for an assured volume of patients. Think of PPOs as the medical equivalent of discount clubs whose members cart off bargain washing machines, except that the employer pays the dues and pockets most of the savings.

The number of people eligible to use Capp Care's services leaped last year from 1.1 million to 1.5 million. More and more Blue Cross associations, insurers, and medical groups are lining up these discounters. From practically nothing several years ago, total PPO membership has grown to about one-sixth of those covered by company health plans. PPOs are growing at the expense of indemnity plans. Employers view them as a cost-saving compromise for workers who resist joining an HMO.

In fact, there's no medical enterprise to join. Some PPOs are nothing more than brokered arrangements, which tiny staffs can supervise because insurers or medical groups handle all the paperwork. Employees are not obliged to use the PPO. But to encourage them to do so, companies pay 90% or even 100% of the bill instead of the usual 80% and will even waive deductibles. But there's rarely a gatekeeper-doctor. And neither doctors nor hospitals are "at risk" as in HMOs, which stand to lose if the annual cost of treatment exceeds their subscription income. In short, PPOs offer indemnity health care in carload lots. However, the package often includes utilization review as well as the screening of doctors and hospitals for quality.

A year ago BP America (with the help of the Coopers & Lybrand accounting firm) launched a PPO comprising only hospitals, not doctors, for non-unionized workers. Hospital costs for these employees stayed flat. Down the road, BP looks for annual escalations of 5% to 10%. Southern California Edison has figures almost as good. So does BellSouth, which put together a hospital-only PPO with the help of Blue Cross; next year the company plans to bring in doctors.

Trouble is, inflation can return with a vengeance. In 1984, Florida's Dade County School Board offered its teachers a PPO plan run by Metropolitan Life. Until 1988, says assistant superintendent Susan Weiner, ev-

erything seemed "wonderful." But despite utilization review, she says, costs began to zoom: "We saw the doctors in the county making up in repeat visits what they were losing in discounts." In place of the PPO, the school board now offers a point-of-service plan built around Met Life's HMOs.

■ **HMOs.** On the spectrum of managed care, this is where employers start to get a firm grip on costs. Most primary-care doctors in HMOs are on salary or receive a flat amount based on the number of patients who have chosen them. They may get a bonus if the plan has a good year financially. So they have nothing to gain by running up your bill. For HMO members there's no big bill anyway—at most a modest "co-payment" of $10 per office visit, to deter those who would hog the doctor's time.

The new point-of-service feature adds some luster to traditional HMOs. In 1987 and 1988 they were tarnished by the same trends that drove up health costs in general. The government clamped down on Medicare and Medicaid spending, and hospitals and doctors made up for lost income by raising fees for people in private health plans. The AIDS epidemic and new feats such as liver transplants costing as much as $250,000 swelled expenses. Many HMOs wound up in the red, and Maxicare, one of the biggest, filed for bankruptcy in March 1989. To stanch losses, some of the plans boosted premiums as much as 20%.

Quite a few employers are disillusioned. A Towers Perrin survey shows that only 51% of them believe that HMOs provide better value for the money than other health plans. Many benefits executives have a strong hunch that HMOs siphon off the young and healthy who require little care, thus forcing premiums higher in indemnity plans that attract sick people who already have close ties with doctors outside the network.

Most HMOs don't deserve the bad reputation. William Boyles, editor of the *Health Market Survey* newsletter in Washington, D.C., rates about two-thirds of the country's 600 HMOs as satisfactory or quite good. He says about one-third—generally with small memberships—are "schlock operations" that have indeed tried to skim off the good risks. But the leveling of total HMO enrollment masks a profound shakeout. The weaker outfits have been folding or merging into stronger ones.

The most efficient HMOs are usually the "group" or "staff" type, in which salaried physicians work solely for the organization at its own medical centers. Some are so successful they have been in no hurry to offer the new opt-out feature that Allied-Signal finds so attractive. Examples: Kaiser Permanente, the California-based king of HMOs, whose membership jumped last year by a record 600,000, to a total 6.2 million, and the flourishing Harvard Community Health Plan, with 400,000 members and an 8%-a-year growth rate. Harvard is considering a point-of-service option but has no plans to become a national HMO. Says President Thomas O. Pyle: "The economies of scale derive from increasing your market share within a region."

RICHARD KLINE

Ripoffs stop at Met Life's Connecticut claims-analysis center, where computers spot padded doctors' bills like the one on the screen.

HMOs save money in myriad ways, and it all starts with the gatekeeper-doctor. Bothered by chest pains? Heart disease is only one of a dozen possible reasons. Short of serious symptoms, the plan's family physician must rule out the other possibilities before sending you to a cardiologist. If you went directly to one, as allowed in an indemnity plan, he too might rule out heart trouble—but he might also go ahead with expensive tests.

Sensitive to talk that they skimp on care, HMOs survey their members to catch any dissatisfaction. This has been honed to a high art at U.S. Healthcare in Blue Bell, Pennsylvania, a type of HMO called an independent practice association (IPA) because its doctors also see other patients. "U.S. Healthcare tells us what the patients think of us," says Dr. David J. Badolato, a family physician in the network. Doctors who don't maintain a variety of standards are dropped.

HMOs' biggest economies are in hospitalization, where they continue to chip away. For people under 65 in Cigna's staff HMO in Phoenix, the hospitalization rate is just about the lowest anywhere: 270 days a year per 1,000 members, barely half the average at indemnity plans. Most mothers get a night's sleep after childbirth and finish resting up with baby at home. Following surgery, many patients are discharged to a less expensive recovery center or are supplied at home with intravenous antibiotics, oxygen, and a nurse.

Patients in HMOs are less likely to go under the knife. "For every ten tonsillectomies done on the outside, we do one," says Dr. Paul Lairson of Kaiser Permanente. Kaiser also performs fewer hysterectomies, he says. In the Los Angeles area, where 30% of women with private insurance have their babies by Caesarean section, Kaiser has reduced the ratio to 16%.

Other savings turn up, big and small. Don't expect a chest X-ray unless there's a good reason; it won't catch lung cancer early, Kaiser says. Members of U.S. Healthcare are only half as likely to wind up in a psychiatric hospital; the HMO favors outpatient care for mental illness and substance abuse. It also deters excessive medical tests by paying outside laboratories and radiologists a flat annual fee. But like other HMOs, this one covers preventive care that indemnity plans don't. Beyond an appropriate age, free tests for colorectal cancer and mammograms are aggressively encouraged.

TWO OBSTACLES have barred HMOs from becoming the mainstream of medicine. There's that persistent suspicion that they get more than their share of the young and healthy. Such talk steams Glenn Hackbarth, vice president of the Harvard Community Health Plan. Membership there *is* slightly younger, he allows, but it includes lots of women in the expensive childbearing years. To counter the creaming argument, HMOs

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have begun to offer discounts to employers whose work forces are significantly younger or cost the plan less money.

The new point-of-service plans are aimed squarely at the other objection, that HMOs force you to stick to a list of participating doctors and hospitals. The marketing approach could not be simpler: Lure 'em in by allowing 'em out. The scenario at Prudential, says senior vice president Samuel Havens, "is that as time goes on, a larger and larger percentage of patients will use the network. And if the trend goes far enough, there will be no more out-of-network services."

To keep employees in the network for Allied-Signal's plan, Cigna tried to enlist many doctors who were already seeing Allied employees. It had the most trouble in New Jersey, a stronghold of indemnity health insurance. Recruiting was far easier in Phoenix, where Allied has a large aircraft jet engine plant and group health plans have a big following. Cigna's network has grown rapidly to accommodate Allied employees, who include most union members. Dr. Glen Stockton, an internist and family practitioner, joined it after some of them requested him. He prefers the HMO to the hassles of utilization review, where "you can get a long-distance call from some faceless person wanting to know why you admitted somebody to a hospital."

And how is the new plan going down with Allied-Signal employees in the area? A sampler of comments runs the gamut. One woman is "very pleased" with her HMO family physician, and a man whose son needed knee surgery says things worked out "wonderfully well." But when another's son had a sports injury, the father had to "call Cigna every day" for permission to see a specialist. Getting past the primary-care doctor to the allergist or dermatologist can be difficult, a couple of other workers complain. Despite the problems, the system is working. An impressive 83% of the eligible employees' health care dollars are being spent within the network. At Southwestern Bell the figure is 80% and rising.

CAMPBELL of Southwestern Bell gives this advice to companies considering a point-of-service plan: Make sure all the stakeholders—employees, doctors, and hospitals—accept the change and make clear that the company is going to "stay the course." Winning over the employees is the challenge today. A few years from now it could be finding enough gatekeepers. Fewer students in medical schools are seeking careers in primary care these days. A new Medicare payment plan for doctors—which raises fees for family physicians and cuts them for some specialists—may reverse this trend, but nobody is sure yet.

Another worry: malpractice suits. In a Michigan case settled out of court, a woman with cervical cancer tried to collect from an HMO whose gatekeeper-doctor refused to allow a Pap smear. Except for a few companies that take care of some employees at their own medical clinics—Gillette, Goodyear—employers contract out all their health care to an insurer or HMO. Until now, that has kept their deep pockets beyond the reach of malpractice suits. But if the company adopts a health plan with a powerful new inducement to go through a gatekeeper, could it be found liable if something went wrong? Companies like Allied-Signal believe they have skirted the danger by relying on the HMO to screen doctors and by allowing employees free choice outside the plan.

"For every ten tonsillectomies done on the outside, we do one," says Lairson of Kaiser. In Los Angeles, Kaiser has halved the ratio of Caesarean births.

The long-term answer, both to malpractice suits and wrestling down costs, is to take the guesswork out of medical care. Ellwood of InterStudy says that new data pinpointing the most effective treatments for 18 major ailments could begin to alter patterns of care within two years. The possibilities excite Kennett Simmons, chief executive of United HealthCare, a big Minneapolis HMO company: "What we have that we never had before is massive amounts of information in computer systems and the computer power to get it out and use it."

That is especially welcome news as the results of plans like Allied-Signal's draw more companies and employees to HMOs—because they, more than any other providers of health care, have the incentives to use new data to bring costs down. Among U.S. companies overall, the killer expense is still definitely at large. But there's reason to hope that some are at last closing in on it. F

FORTUNE

THE FORTUNE

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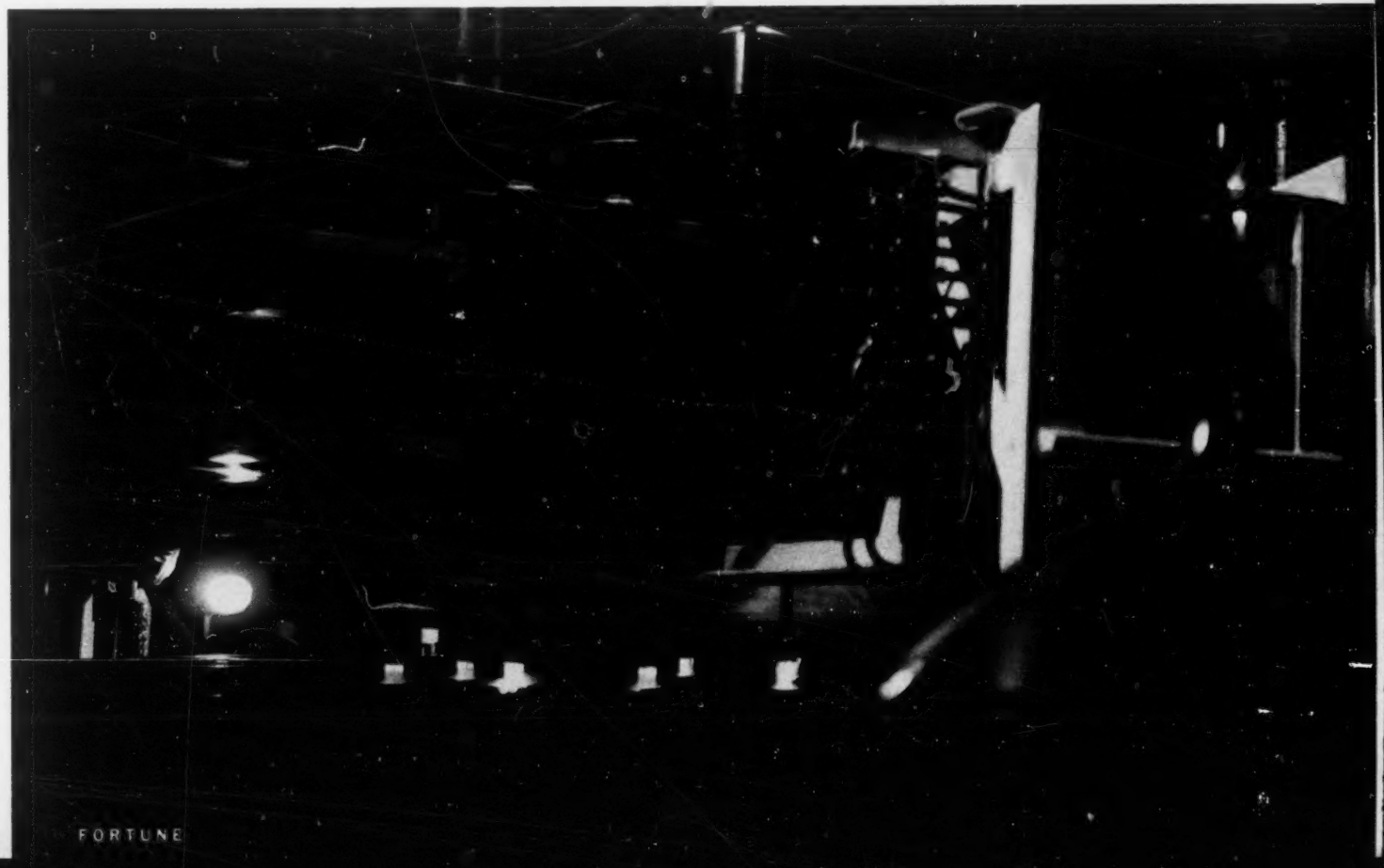
HANGING TOUGH IN A ROUGH YEAR

After zooming to new heights in 1988, the FORTUNE 500 came back to earth last year. And the landing wasn't exactly soft. Profits, which had climbed an unprecedented 79% over the previous two years, fell 8.2%, hammered by higher interest payments and strong foreign competition that made it tough to pass along rising labor costs. Six of the ten largest U.S. industrial corporations posted double-digit earnings declines, led by a 66% drop at No. 8 Chrysler. Though the U.S. economy expanded for the seventh straight year, only 264 companies on the 500 boosted profits, down from 327 last year.

Clearly, things have gotten rough out there. In the 1960s and 1970s, back before global competition became so intense and incessant, the earnings of the 500 companies invariably rose as long as the domestic economy was growing. Not anymore. Since the current economic expansion began in 1982, profits have fallen in three out of seven years. (For more on the performance of the 500 in the past decade, see box.)

Despite—indeed partly because of—the hard knocks they took, the 500 closed out the 1980s in surprisingly good shape. For one thing, they grew: Sales in 1989 rose 7% to $2.16 trillion, a new record. More important, they achieved a median return on shareholders' equity of 15%. While down from a record 16.2% in 1988, that's the third-highest ROE registered by the 500 since FORTUNE began publishing its directory 35 years ago. True, rising corporate

PHOTOGRAPH BY WILL MCINTYRE



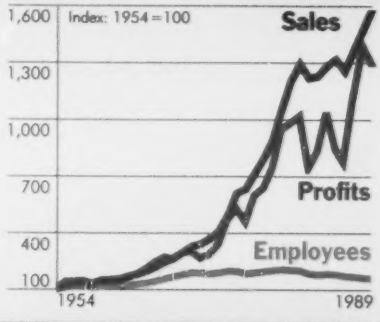
debt, which makes productive resources available without increasing equity, accounts for some of that improvement. But innumerable rounds of restructuring have also transformed many big U.S. companies into leaner, more efficient competitors.

Consider the 500's incredible shrinking work force. At 12.5 million, employment is down 177,000 from 1988 and 3.7 million below the postwar peak of 1979. When they last employed so few workers, back in 1966, the 500 generated sales of $961 billion in inflation-adjusted dollars—less than half as much as last year. Now that's productivity.

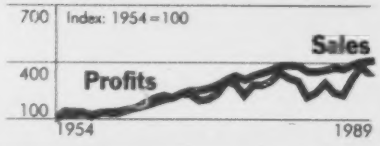
Pharmaceuticals led the charge in 1989, posting the best returns in the 500 for the fourth year running. Countering the prevailing downward drift, the industry's median ROE actually rose from 23.6% to 25.5%—bolstered by strong international sales and price increases of around 8%. American Home Products, which acquired A.H. Robins in December, led all drug-

HOW THE 500 PERFORMED

THE 500: 1954-89 IN CURRENT DOLLARS



THE 500: 1954-89 IN CONSTANT DOLLARS



THE 500: 1989 vs. 1988

	1989	1988
SALES (billions)	$2,164.3	$2,023.1
CHANGE IN SALES	7.0%	7.6%
PROFITS (billions)	$105.6	$115.0
CHANGE IN PROFITS	(8.2%)	26.9%
ASSETS (billions)	$2,288.1	$2,078.8
NO. OF SALES INCREASES	405	419
NO. OF PROFIT INCREASES	264	327
NO. OF MONEY LOSERS	54	42
MEDIAN RETURN ON SALES	4.7%	5.5%
MEDIAN RETURN ON ASSETS	5.9%	6.8%
MEDIAN RETURN ON EQUITY	15.0%	16.2%
MEDIAN RETURN TO INVESTORS	17.5%	14.1%
NO. OF EMPLOYEES (millions)	12.5	12.7

Corning (No. 181) molds high-quality panels for TV picture tubes at this Pennsylvania plant. With sales up 16% and earnings 24%, the glassmaker produced one of the year's better showings.

THE 500 IN THE 1980s

As decades go, this one was no day at the beach. While the economy's expansion set a new peacetime record, companies on the 500 strained harder than ever just to hold their ground. Measured in constant dollars, total sales were only 7.1% higher in 1989 than in 1979. Real profits ended up 3.6% *lower*. All in all, not much to show for ten years of back-breaking effort, particularly set against the giddy increases of the 1960s and 1970s.

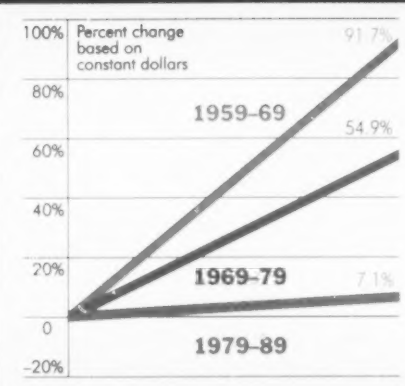
Why the slowdown? Falling oil prices are one reason. In 1979 petroleum-refining companies accounted for 26% of the 500's sales and 29% of earnings; in 1989 those shares were 17% and 15%, respectively. And fiercer foreign competition, abetted in the first half of the decade by the strong dollar, shriveled revenue growth and profit margins among many U.S. manufacturers.

The *d* and *r* words—debt and restructuring—were also rallying cries in the 1980s. When the decade began, companies on the 500 supported $2.17 in assets with a dollar of equity; by 1989 rising debt had lifted that ratio to 3.18. Says Glenn Hubbard, a professor of finance at Columbia University's business school: "What's disturbing is not just that the average level is up, but that a number of companies are very highly leveraged."

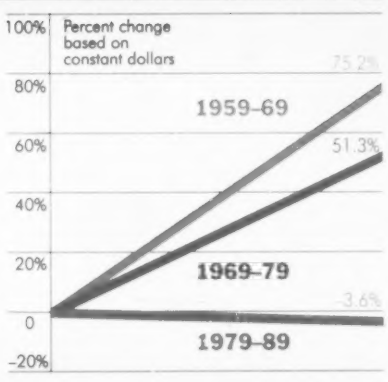
By decade's end, restructuring had pared 3.7 million workers from the payroll. The 21% decline in 500 employment since 1980 was considerably steeper than the drop in total U.S. manufacturing jobs.

What companies fared best in these tough times? ConAgra, the decade's sales leader, expanded by feverish acquisitions. But No. 2 Digital Equipment's 21.7% average annual sales increases reflect strictly internal growth. Big one-time gains from the sale of cable TV holdings in 1989 boosted New York Times and Dow Jones to the top of the profit table. Still, Dow Jones's consistency is front-page news; it has averaged a 25% return on equity over the past ten years. **– Rahul Jacob**

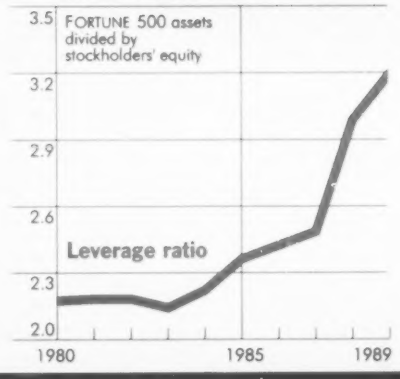
SALES GROWTH BY DECADE



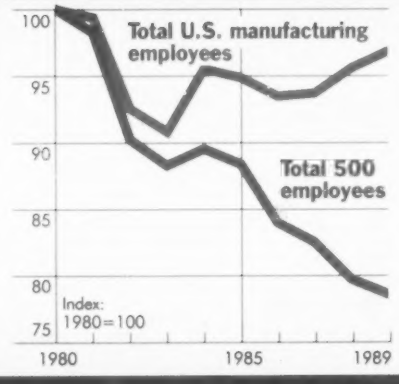
PROFIT GROWTH BY DECADE



RISING DEBT



FALLING EMPLOYMENT



SALES LEADERS

COMPANY	1989 SALES RANK	% CHANGE*
CONAGRA	36	33.2%
DIGITAL EQUIPMENT	27	21.7
PHILIP MORRIS	7	20.3
HEWLETT-PACKARD	33	17.6
SEQUA	207	16.0
SONOCO PRODUCTS	244	14.7
DOW JONES	235	14.5
UNISYS	43	13.7
ANHEUSER-BUSCH	49	13.1
BRISTOL-MYERS SQUIBB	50	12.8

Includes only companies whose sales increased every year.
*Average annual compound growth 1979–89.

PROFIT LEADERS

COMPANY	1989 SALES RANK	% CHANGE*
NEW YORK TIMES	227	22.0%
DOW JONES	235	20.0
DEAN FOODS	240	19.9
ABBOTT LABORATORIES	90	17.0
H.J. HEINZ	82	14.3
SARA LEE	34	13.9
EMERSON ELECTRIC	67	11.3
ELI LILLY	116	11.1
GENERAL ELECTRIC	5	10.8
AMERICAN HOME PRODUCTS	68	10.8

Includes only companies whose profits increased every year.
*Average annual compound growth 1979–89.

makers—even perennial champ Merck—with an enviable ROE of 56%.

Beverages continued to sparkle. Their median ROE of 23.2% was second only to pharmaceuticals. Profits at Coca-Cola, which accounts for two-fifths of the industry total, rose 65%, in part because of a $509 million gain from the sale of its stake in Columbia Pictures. Robust foreign sales also kept the tobacco sector smoking. Bantamweights UST, maker of Skoal and Copenhagen snuff, and Lorillard, which claims just 8% of the U.S. cigarette market, enjoy profit margins of 28% and 27%, respectively—the best on the 500.

BY THE SAME measure, mining and crude oil companies clambered back from near the bottom of the list in 1988 to second place this year. They also provided a bountiful 51.7% total return to investors, which includes both price appreciation and dividend yield. Disaster provided the silver lining for Union Texas Petroleum, which reaped a windfall insurance settlement after an oil rig explosion in the North Sea halved its worldwide production. That policy, taken out in boom times, paid a hefty $4 premium over the prevailing $15 price per barrel.

Still, for most industries, it was at best a mediocre year. Median profits fell in nine of FORTUNE's 27 industry groups. Among those registering increases, only five were in double digits, vs. 22 last year. In most hard-hit sectors, a few standouts at least helped cushion the blows. In aerospace, where cutbacks in defense spending devastated many distinguished members of the military-industrial complex, Boeing, buoyed by rising deliveries of its 747 and 757 series jets, saw profits soar 58% on a 20% sales increase.

Earnings among petroleum refiners—the biggest sector by sales in the 500—also stopped gushing and sank 12%. But that hole too would have been drier had giants like Atlantic Richfield, No. 22 on the list, and Texaco, No. 10, not pumped out big earnings increases. In Texaco's case, its 85% rise in profits reflects not some new find but the sale of its Canadian subsidiary and other assets.

Alas, no such savior took the wheel for the motor vehicles and parts industry. Battered by declining sales, Japanese competition, higher interest rates, and cutthroat rebating, profits slumped at all of the Big Three. With median earnings down 25%, this was the poorest performer on the 500 by nearly every measure of profitability.

Foreigners remained eager acquirers of U.S. businesses in 1989, spending a record $61 billion on direct investments. Of the hundreds of companies snapped up by Japanese or European buyers, at least four were from the FORTUNE 500. Among them: last year's No. 97 SmithKline Beckman, which merged with Britain's Beecham Group in a $8 billion deal; No. 70 Pillsbury, bought for $5.8 billion by Britain's Grand Metropolitan; and No. 131 Combustion Engineering, acquired by the Swiss-Swedish giant ABB Asea Brown Boveri. Each of those acquired companies helped inaugurate the first FORTUNE 500 back in 1955.

How much has this foreign feeding frenzy altered the composition of the 500? Somewhat. A total of 17 companies on this year's list, representing $81.1 billion in sales and $3.6 billion in profits, are owned by compa-

THE BIGGEST GAINERS, 1989

THE TEN LARGEST INCREASES IN SALES

	SALES RANK	
MAXXAM	184	366.7%
DOSKOCIL	319	350.3
CONNER PERIPHERALS	417	176.4
TEREX	369	151.0
JEFFERSON SMURFIT	154	133.9
CRYSTAL BRANDS	372	98.2
NACCO INDUSTRIES	313	92.6
MARK IV INDUSTRIES	409	84.2
TIME WARNER	59	69.6
SUN MICROSYSTEMS	232	68.2

THE TEN LARGEST INCREASES IN PROFITS*

SUN	46	1,300.0%
PILGRIM'S PRIDE	438	1,092.4
WESTMORELAND COAL	465	561.9
MAXXAM	184	568.5
AMSTED INDUSTRIES	341	475.2
ARVIN INDUSTRIES	251	419.0
HARNISCHFEGER INDUSTRIES	262	389.5
GERBER PRODUCTS	312	284.2
AMERADA HESS	89	283.5
MCCORMICK	299	217.6

*Excludes companies that lost money in 1988.

THE BIGGEST LOSERS, 1989

THE TEN LARGEST DECREASES IN SALES

	SALES RANK	
FORT HOWARD	336	43.3%
HENLEY GROUP	238	41.7
BEATRICE	111	40.1
TYLER	468	39.6
AM INTERNATIONAL	374	34.1
INT'L MINERALS & CHEMICAL	352	33.2
HILLSBOROUGH HOLDINGS	236	31.9
TESORO PETROLEUM	396	31.2
AMSTAR	399	27.6
ARMCO	178	22.7

THE FIVE LARGEST DECREASES IN PROFITS*

CONTROL DATA	153	40,123.5%
PRIME COMPUTER	259	1,312.4
ZENITH ELECTRONICS	169	684.6
MACK TRUCKS	215	683.3
FINEVEST FOODS	422	657.9

*Decreases over 100% reflect swings from 1988 profits to 1989 losses.

THE FIVE LARGEST LOSSES

		$ MIL.
RJR NABISCO HOLDINGS	24	$1,149.0
CONTROL DATA	153	680.4
UNISYS	43	639.3
WANG LABORATORIES	147	424.3
TIME WARNER	59	256.0

THE MOST PROFITABLE, 1989

THE TEN HIGHEST RETURNS ON STOCKHOLDERS' EQUITY

	SALES RANK	
LYONDELL PETROCHEMICAL	93	4,155.6%
GILLETTE	124	373.1
RELIANCE ELECTRIC	275	327.3
GENCORP	211	135.5
WHEELING-PITTSBURGH STEEL	310	115.6
POLAROID	218	97.4
LORILLARD	264	96.7
STERLING CHEMICALS	479	94.1
LEVI STRAUSS ASSOCIATES	128	64.9
PHILLIPS-VAN HEUSEN	444	63.6
THE 500 MEDIAN		15.0

THE TEN HIGHEST RETURNS ON ASSETS

LORILLARD	264	41.1%
GEORGIA GULF	323	40.3
STERLING CHEMICALS	479	31.6
UST	433	29.9
LYONDELL PETROCHEMICAL	93	29.5
MARION LABORATORIES	354	29.0
MERCK	70	22.1
WRIGLEY (WM. JR.)	345	21.3
VISTA CHEMICAL	392	21.2
COCA-COLA	51	20.8
THE 500 MEDIAN		5.9

THE TEN HIGHEST RETURNS ON SALES

UST	433	28.4%
LORILLARD	264	27.0
MARION LABORATORIES	354	23.5
LILLY (ELI)	116	22.5
MERCK	70	22.3
NEWMONT MINING	467	20.9
COCA-COLA	51	18.8
DOW JONES	235	18.5
BERKSHIRE HATHAWAY	179	18.0
STERLING CHEMICALS	479	17.9
THE 500 MEDIAN		4.7

nies on the International 500, up from just seven in 1985. But as a share of total sales and profits, that's still just 3.8% and 3.4% respectively.

Purely domestic deals continued to have a far greater impact. Of the 46 companies that disappeared from the list in 1989, 15 were swallowed by other 500 companies. In the drug industry's richest marriage, Bristol-Myers purchased Squibb for $13 billion and rose from No. 73 to No. 50 on the list. In another big deal, Time Inc., the parent of FORTUNE's publisher, acquired Warner Communications. The combination, christened Time Warner, jumped from No. 102 to No. 59.

A careful reader may note the existence of two companies bearing the name Goodrich on this year's list. That's no mistake. B.F. Goodrich, No. 176, first merged its tire business with Uniroyal in 1986. Last year, still lacking either a blimp or satisfactory earnings from tires, Goodrich decided to keep its chemical operations and unload its 50% stake in the venture with Uniroyal to Clayton & Dubilier, a New York LBO firm. The result is less a spinoff than a case of corporate mitosis. With sales of $2.27 billion, the new company—Uniroyal Goodrich Tire, No. 195—is almost as big as its former parent.

As in years past, leveraged buyouts and spinoffs dominate the ranks of companies with the highest returns on stockholders' equity. That's only partly a tribute to this crowd's management prowess; it also reflects their pint-size equity base. This year's top ten features Levi Strauss (a five-year-old LBO), Reliance Electric (spun off in 1986 by Exxon), and Sterling Chemicals (sent packing in 1986 by Monsanto). But the champ—with sales of $5.4 billion and a jaw-dropping ROE of 4,155.6%—is newcomer Lyondell Petrochemical. This former division of Atlantic Richfield was unloaded last year in the fourth-largest initial public offering on record. It joins the 500 as No. 93.

Another nifty way to boost returns on equity and sometimes shake off potential raiders is to buy back your stock. In 1989 U.S. businesses again pursued that option with a vengeance, retiring some $100 billion more equity than they issued. Among the ten leaders in returns on equity, Phillips-Van Heusen, Gencorp, and Polaroid all bought bucketloads of their own shares.

But now with interest rates rising and the junk bond market collapsing, executives have begun to worry less about raiders and more about debt loads. No company had more to worry about than RJR Nabisco. Groaning under the unprecedented borrowing required to finance its purchase by KKR, RJR took a $1.15 billion loss in 1989—the largest among the 500.

Among the Brobdingnagians at the top of the list, the pecking order changed little. GM once again routed all comers for the No. 1 spot with $127 billion in sales, $30 billion more than its closest contender, Ford. The real head-turner, though, was Philip Morris. Fattened by a full year of results following its December 1988 acquisition of Kraft, it rose from No. 10 to No. 7.

THE BEST INVESTMENTS

THE TEN HIGHEST TOTAL RETURNS TO INVESTORS, 1989*

	SALES RANK	
SAVANNAH FOODS & INDUST.	328	204.3%
TYLER	468	165.6
IMPERIAL HOLLY	434	140.2
LPL TECHNOLOGIES	431	140.0
FRUIT OF THE LOOM	292	133.3
HON INDUSTRIES	462	110.7
MATTEL	302	107.9
MITCHELL ENERGY & DEVEL.	482	96.7
AVON PRODUCTS	135	95.3
MAXXAM	184	92.8

THE FIVE LOWEST

INTERCO	138	-84.5%
ALLEGHENY INTERNATIONAL	358	-82.7
LONE STAR TECHNOLOGIES	432	-73.6
REXENE	460	-68.0
MACK TRUCKS	215	-53.5
THE 500 MEDIAN		17.5

*Total return includes stock gains plus dividends.

THE MOST PRODUCTIVE, 1989

THE TEN HIGHEST TOTAL RETURNS TO INVESTORS, 1979-89 ANNUAL AVERAGE*

	SALES RANK	
HASBRO	277	51.0%
SAVANNAH FOODS & INDUST.	328	48.5
AFFILIATED PUBLICATIONS	500	44.4
MARION LABORATORIES	354	43.6
TYSON FOODS	174	43.4
NEWELL	321	40.1
COOPER TIRE & RUBBER	367	39.5
BERKSHIRE HATHAWAY	179	39.1
SHAW INDUSTRIES	316	38.7
PHILIPS INDUSTRIES	360	36.7

THE FIVE LOWEST

ALLEGHENY INTERNATIONAL	358	-35.0%
MANVILLE	197	-24.4
STORAGE TECHNOLOGY	342	-23.6
NAVISTAR INTERNATIONAL	113	-19.9
LTV	72	-17.0
THE 500 MEDIAN		16.3

*Total return includes stock gains plus dividends

THE TEN HIGHEST IN SALES PER EMPLOYEE

	SALES RANK	
LYONDELL PETROCHEMICAL	93	$2,596,135
AG PROCESSING	359	1,561,293
CITGO PETROLEUM	105	1,497,329
NAT'L COOP. REFINERY ASS'N	437	1,184,351
LOUISIANA LAND & EXPLOR.	404	1,097,372
AMERICAN PETROFINA	148	913,548
TEXACO	10	874,525
TOSCO	270	857,452
EXXON	3	833,231
GEORGIA GULF	323	819,639

THE FIVE LOWEST

FRUIT OF THE LOOM	292	$50,804
RUSSELL	428	50,659
OXFORD INDUSTRIES	489	50,372
KELLWOOD	402	50,245
SEAGATE TECHNOLOGY	281	47,666
THE 500 MEDIAN		146,887

THE TEN HIGHEST IN SALES PER DOLLAR OF STOCKHOLDERS' EQUITY

	SALES RANK	
LYONDELL PETROCHEMICAL	93	$597.11
RELIANCE ELECTRIC	275	128.27
GILLETTE	124	54.99
AMERICAN STANDARD	127	49.78
NATIONAL GYPSUM	283	37.58
HARVARD INDUSTRIES	400	23.78
THORN APPLE VALLEY	459	21.87
LEAR SIEGLER SEATING	340	20.55
PHILLIPS-VAN HEUSEN	444	19.77
CYCLOPS INDUSTRIES	286	18.61

THE FIVE LOWEST

PENN CENTRAL	226	$1.00
ST. JOE PAPER	436	.86
ORYX ENERGY	303	.83
SEAGOLD VINEYARDS HOLDING	150	.71
BERKSHIRE HATHAWAY	179	.50
THE 500 MEDIAN		2.96

The pacesetters for sales growth, as usual, were the smaller fry. This year's leader with a 367% revenue increase is Maxxam, an acquisitive conglomerate built up since the late 1970s by Houston financier Charles Hurwitz. Maxxam leaped from No. 485 to No. 184 on the list when Hurwitz, armed with junk financing from Drexel Burnham, swooped down on aluminum maker KaiserTech.

But plenty of others rose through the ranks simply by building better—or at least more alluring—mousetraps. Western Publishing Group, which made its maiden appearance on the 500 at No. 498, etched out a 16% sales increase with its Pictionary game, a popular sketch pad version of charades. The fastest-growing newcomer was computer disk drive maker Conner Peripherals, founded in 1986 by Silicon Valley veteran Finis Conner. Last year, Conner's revenues exploded from $257 million to $709 million and No. 417 on the list. Only Compaq Computer, not coincidentally Conner's biggest customer, made the 500 as quickly.

CONNER'S dazzling performance shone even brighter against the darkness that covered much of the computer industry last year. Gaze, for a moment, over that ravaged landscape. Computer makers accounted for three of the five biggest losses in 1989. Control Data and Unisys, which lost $680 million and $639 million, respectively, were old-line mainframe makers struggling to adapt to a new era. The other, minicomputer maker Wang Laboratories, was for a time one of the brightest stars of the 1980s.

Though these were the most extreme cases, almost every computer company seemed to be straining to cope with the problems spawned by the industry's success in squeezing ever more power and speed into ever smaller new machines. Even venerable IBM had a 35% earnings decline. Investors certainly had reason to weep. The computer sector's median total return of minus 17% was the lowest of any industry on the 500. All this, mind you, from an industry destined to be the engine of future economic growth.

Economist Joseph Schumpeter, of course, labeled this paradox at the heart of capitalism long ago: "creative destruction." The decade just ended was only a harbinger. Even more creation and destruction lie ahead. The CEOs of the 500, who know that, have already fastened their seat belts. Fasten yours. The 1990s are likely to be one wild ride.

– Ret Autry and Mark M. Colodny

THE FORTUNE 500

LARGEST U.S. INDUSTRIAL CORPORATIONS

RANK 1989	RANK 1988		SALES $ millions	SALES % change from 1988	PROFITS $ millions	PROFITS Rank	PROFITS % change from 1988	ASSETS $ millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ millions	STOCKHOLDERS' EQUITY Rank
1	1	**GENERAL MOTORS** Detroit	126,974.3	4.9	4,224.3	1	(13.0)	173,297.1	1	34,982.5	2
2	2	**FORD MOTOR** Dearborn, Mich.	96,932.6	4.9	3,835.0	3	(27.6)	160,893.3	2	22,727.8	4
3	3	**EXXON** New York	86,656.0*	8.9	3,510.0	5	(33.3)	83,219.0	4	30,244.0	3
4	4	**INT'L BUSINESS MACHINES** Armonk, N.Y.	63,438.0	6.3	3,758.0	4	(35.3)	77,734.0	5	38,509.0	1
5	5	**GENERAL ELECTRIC** Fairfield, Conn.	55,264.0	11.8	3,939.0	2	16.3	128,344.0	3	20,890.0	5
6	6	**MOBIL** New York	50,976.0*	5.8	1,809.0	11	(13.3)	39,080.0	7	16,274.0	6
7	10	**PHILIP MORRIS** New York	39,069.0*	51.1	2,946.0	6	26.1	38,528.0	8	9,571.0	11
8	7	**CHRYSLER** Highland Park, Mich.	36,156.0	1.9	359.0	74	(65.8)	51,038.0	6	7,233.0	15
9	9	**E.I. DU PONT DE NEMOURS** Wilmington, Del.	35,209.0	8.3	2,480.0	8	13.2	34,715.0	10	15,798.0	8
10	8	**TEXACO** White Plains, N.Y.	32,416.0	(3.4)	2,413.0	9	85.0	25,636.0	15	9,180.0	12
11	11	**CHEVRON** San Francisco	29,443.0*	16.9	251.0	107	(85.8)	33,884.0	11	13,980.0	9
12	12	**AMOCO** Chicago	24,214.0*	14.5	1,610.0	13	(22.0)	30,430.0	12	13,684.0	10
13	13	**SHELL OIL** Houston[1]	21,703.0	3.0	1,405.0	15	13.4	27,599.0	14	16,049.0	7
14	15	**PROCTER & GAMBLE** Cincinnati[2]	21,689.0	12.2	1,206.0	17	18.2	16,351.0	24	6,215.0	19
15	19	**BOEING** Seattle	20,276.0	19.5	973.0	21	58.5	13,278.0	30	6,131.0	20
16	14	**OCCIDENTAL PETROLEUM** Los Angeles	20,068.0	3.4	285.0**	88	(5.6)	20,741.0	20	5,899.0	21
17	16	**UNITED TECHNOLOGIES** Hartford[3]	19,765.5	9.3	702.1	35	6.5	14,598.2	27	4,740.3	30
18	18	**EASTMAN KODAK** Rochester, N.Y.	18,398.0	8.0	529.0	45	(62.1)	23,652.0	17	6,642.0	17
19	23	**USX** Pittsburgh	17,755.0*	12.4	965.0	22	27.6	17,500.0	22	5,737.0	22
20	21	**DOW CHEMICAL** Midland, Mich.	17,730.0	6.3	2,487.0	7	3.7	22,166.0	19	7,957.0	14
21	22	**XEROX** Stamford, Conn.	17,635.0	7.3	704.0	34	81.4	30,088.0	13	5,035.0	28
22	17	**ATLANTIC RICHFIELD** Los Angeles	15,905.0	(9.8)	1,953.0	10	23.4	22,261.0	18	6,562.0	18
23	26	**PEPSICO** Purchase, N.Y.	15,419.6	18.5	901.4	26	18.3	15,126.7	26	3,891.1	40
24	20	**RJR NABISCO HOLDINGS** New York[4]	15,224.0¶	(10.2)	(1,149.0)	476	(182.5)	36,412.0	9	1,237.0	133
25	25	**MCDONNELL DOUGLAS** St. Louis	14,995.0	(0.5)	219.0	122	(37.4)	13,397.0	29	3,287.0	49
26	24	**TENNECO** Houston	14,439.0	(8.1)	584.0	42	(29.0)	17,381.0	23	3,277.0	50
27	30	**DIGITAL EQUIPMENT** Maynard, Mass.[2]	12,866.0	12.1	1,072.6	20	(17.8)	10,667.8	37	8,035.7	13
28	27	**WESTINGHOUSE ELECTRIC** Pittsburgh	12,844.0	2.8	922.0	25	12.1	20,314.0	21	4,384.0	33
29	28	**ROCKWELL INTERNATIONAL** El Segundo, Calif.[5]	12,633.1	5.7	734.9	33	(9.5)	8,938.8	46	3,977.6	38
30	31	**PHILLIPS PETROLEUM** Bartlesville, Okla.	12,492.0	10.5	219.0	123	(66.3)	11,256.0	34	2,132.0	75
31	29	**ALLIED-SIGNAL** Morristown, N.J.	12,021.0	0.9	528.0	47	14.0	10,132.0	38	3,412.0	47
32	34	**MINNESOTA MINING & MFG.** St. Paul	11,990.0	13.3	1,244.0	16	7.8	9,776.0	40	5,378.0	24
33	39	**HEWLETT-PACKARD** Palo Alto, Calif.[6,7]	11,899.0	21.0	829.0	29	1.6	10,075.0	39	5,446.0	23
34	36	**SARA LEE** Chicago[2]	11,738.3	12.6	410.5	66	26.3	6,522.7	67	1,914.9	87
35	42	**INTERNATIONAL PAPER** Purchase, N.Y.	11,378.0	19.4	864.0	27	14.6	11,582.0	31	5,147.0	26
36	44	**CONAGRA** Omaha[8]	11,340.4	19.7	197.9	133	27.9	4,278.2	103	949.5	161
37	40	**ALUMINUM CO. OF AMERICA** Pittsburgh	11,161.5	13.9	944.9	23	9.7	11,540.6	32	5,266.9	25
38	35	**CATERPILLAR** Peoria, Ill.	11,126.0	6.6	497.0	50	(19.3)	10,926.0	35	4,474.0	32
39	32	**GOODYEAR TIRE & RUBBER** Akron	11,044.7	2.2	206.8	129	(40.9)	8,460.3	53	2,143.8	74
40	47	**UNOCAL** Los Angeles	10,417.0*	17.7	260.0	101	(45.8)	9,257.0	43	2,300.0	71
41	43	**GEORGIA-PACIFIC** Atlanta	10,171.0	7.0	661.0	38	41.5	7,056.0	61	2,717.0	58
42	37	**WEYERHAEUSER** Tacoma	10,105.6	1.0	341.1	75	(39.6)	15,976.0	25	4,147.6	37
43	38	**UNISYS** Blue Bell, Pa.	10,096.9	2.0	(639.3)	474	(193.9)	10,751.0	36	3,881.8	41
44	41	**GENERAL DYNAMICS** St. Louis	10,053.2	5.3	293.1	84	(22.7)	6,548.6	66	2,125.6	76
45	33	**LOCKHEED** Calabasas, Calif.	9,932.0	(6.9)	2.0	416	(99.7)	6,792.0	63	2,062.0	78
46	48	**SUN** Radnor, Pa.	9,927.0*	15.3	98.0	211	1,300.0	8,699.0	48	3,254.0	51
47	45	**JOHNSON & JOHNSON** New Brunswick, N.J.	9,844.0	9.4	1,082.0	19	11.1	7,919.0	56	4,148.0	36
48	52	**MOTOROLA** Schaumburg, Ill.	9,620.0	16.6	498.0	49	11.9	7,686.0	57	3,803.0	42
49	46	**ANHEUSER-BUSCH** St. Louis	9,481.3*	6.2	767.2	30	7.2	9,025.7	45	3,099.9	52
50	73	**BRISTOL-MYERS SQUIBB** New York[9]	9,422.0	57.8	747.0	32	(9.9)	8,497.0	52	5,084.0	27

The definitions, explanations, and footnotes underlying the figures in this directory are on page 367.

MARKET VALUE 3/9/90		PROFITS AS A PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCK-HOLDERS' EQUITY			% change from 1988	1979-89 annual growth rate		1989		1979-89 annual average			
$ millions	Rank	%	Rank	%	Rank	%	Rank	1989/$		%	Rank	%	Rank	%	Rank		1989
27,786.7	6	3.3	317	2.4	370	12.1	277	6.33	(11.7)	2.3	230	8.2	254	12.2	247	17	1
21,803.7	13	4.0	284	2.4	372	16.9	186	8.22	(25.0)	14.3	66	(8.3)	326	25.4	61	17	2
57,968.7	2	4.1	277	4.2	303	11.6	287	2.74	(30.6)	1.2	245	19.5	202	22.0	99	18	3
61,205.5	1	5.9	182	4.8	272	9.8	317	6.47	(34.0)	2.3	231	(19.4)	369	8.2	289	6	4
56,183.5	3	7.1	136	3.1	348	18.9	142	4.36	16.3	10.9	112	48.8	78	22.3	92	7	5
25,123.7	10	3.5	302	4.6	286	11.1	294	4.40	(13.2)	(0.7)	263	44.3	100	15.6	194	18	6
34,605.3	4	7.5	120	7.6	172	30.8	41	3.18	26.8	20.1	23	69.4	29	30.1	28	8	7
4,063.0	79	1.0	399	0.7	409	5.0	375	1.55	(66.7)	–		(22.7)	379	22.6	88	17	8
26,728.0	9	7.0	142	7.1	194	15.7	207	3.53	16.2	5.1	191	44.8	95	17.7	154	5	9
15,665.8	21	7.4	124	9.4	107	26.3	53	9.12	70.5	3.5	222	42.4	105	17.1	164	18	10
24,261.1	12	0.9	404	0.7	408	1.8	394	0.73	(85.9)	(17.9)	322	55.5	51	15.6	195	18	11
27,750.4	7	6.6	155	5.3	255	11.8	283	3.12	(22.0)	2.0	234	51.8	63	16.7	175	18	12
N.A.		6.5	166	5.1	264	8.8	334	N.A.	–	–		–		–		18	13
21,018.3	14	5.6	197	7.4	187	19.4	138	7.12	19.5	7.4	160	66.4	33	19.0	134	23	14
15,624.3	22	4.8	234	7.3	191	15.9	205	4.23	57.8	6.1	178	50.2	74	18.7	141	1	15
7,431.9	39	1.4	387	1.4	399	4.8	379	1.03**	(14.9)	(17.8)	321	27.9	167	10.3	273	8	16
6,599.9	45	3.6	300	4.8	276	14.8	229	5.34	5.7	5.1	193	36.1	132	14.1	219	1	17
12,893.9	25	2.9	337	2.2	376	8.0	347	1.63	(62.2)	(5.1)	284	(4.9)	313	11.8	252	22	18
9,232.9	31	5.4	202	5.5	249	16.8	187	3.53	34.7	–		27.2	172	13.2	232	18	19
18,009.5	18	14.0	26	11.2	62	31.3	38	9.20	8.2	12.3	89	26.3	175	18.3	148	5	20
5,041.8	66	4.0	280	2.3	374	12.9§	263	6.56	87.4	(0.2)	258	3.0	280	5.2	311	22	21
18,861.0	15	12.3	31	8.8	129	29.8	43	11.26	28.2	9.0	135	44.5	98	17.0	170	18	22
15,459.4	23	5.8	185	6.0	233	23.2	81	3.40	17.2	13.6	73	65.1	36	26.7	52	3	23
N.A.		(7.5)	464	(3.2)	444	(92.9)	441	N.A.	–	–		–		–		8	24
2,220.1	130	1.5	385	1.6	393	6.7	363	5.72	(37.3)	1.2	244	(15.7)	353	8.5	287	1	25
8,516.8	34	4.0	279	3.4	339	17.3§	179	4.46	(18.6)	(1.7)	267	34.4	140	12.5	244	11	26
9,337.6	30	8.3	101	10.1	82	13.3	252	8.45	(14.6)	15.2	57	(16.6)	360	9.1	283	6	27
10,703.5	26	7.2	133	4.5	292	21.0	102	6.31	11.5	–		45.6	88	27.4	48	7	28
5,369.4	59	5.8	189	8.2	145	18.5	155	2.87	(5.6)	12.1	92	13.0	228	18.8	140	1	29
6,249.8	50	1.8	375	1.9	383	10.3	307	0.90	(66.9)	(7.3)	295	35.1	135	11.5	256	18	30
5,220.1	62	4.4	256	5.2	260	15.5	212	3.55	14.5	38.8	2	12.8	231	6.7	301	1	31
18,119.3	17	10.4	60	12.7	44	23.1	82	5.60	10.0	7.2	165	33.0	146	17.0	168	22	32
10,670.3	27	7.0	144	8.2	144	15.2	221	3.52	4.8	15.2	58	(10.7)	342	12.9	234	6	33
6,598.4	46	3.5	304	6.3	225	21.4	96	3.50	23.7	14.5	65	64.2	37	32.1	20	3	34
5,557.9	56	7.6	118	7.5	181	16.3	188	7.72	17.5	3.5	221	25.6	179	16.8	172	9	35
3,143.3	97	1.7	376	4.6	287	20.7§	108	2.45	26.3	15.3	56	50.2	72	35.3	12	8	36
5,736.9	54	8.5	95	8.2	146	17.9	164	10.67	9.5	4.1	215	39.6	118	15.0	205	15	37
6,288.0	49	4.5	250	4.5	291	11.1	295	4.90	(19.3)	(1.5)	265	(7.2)	321	3.5	320	11	38
2,052.1	137	1.9	369	2.4	369	9.6	319	3.58	(41.4)	5.9	181	(11.8)	346	18.9	135	21	39
6,962.3	43	2.5	350	2.8	353	11.3	291	1.11	(46.1)	(2.6)	273	60.9	42	13.9	221	18	40
4,149.0	76	6.5	164	9.4	109	24.3	69	7.42	55.9	9.0	134	35.5	134	10.1	275	9	41
5,323.6	60	3.4	314	2.1	378	8.2	337	1.56	(41.8)	(5.3)	285	14.6	221	6.9	297	9	42
2,335.8	122	(6.3)	462	(5.9)	463	(16.5)	426	(4.71)	(231.6)	–		(45.1)	407	(1.1)	336	6	43
1,570.4	170	2.9	335	4.5	295	13.8	245	7.01	(22.4)	7.4	157	(9.9)	338	6.0	306	1	44
2,251.2	126	0.0	422	0.0	422	0.1	405	0.03	(99.7)	(30.8)	332	(1.9)	302	14.7	211	1	45
3,974.3	80	1.0	400	1.1	402	3.0	390	0.92	1,433.3	(16.9)	320	33.1	145	13.8	223	18	46
16,528.7	16	11.0	51	13.7	31	26.1	56	3.25	13.6	13.0	84	42.6	104	19.2	130	19	47
8,303.8	36	5.2	213	6.5	215	13.1	257	3.83	11.7	8.8	141	41.2	113	15.2	203	7	48
10,011.1	28	8.1	107	8.5	139	24.7	65	2.68	9.4	17.6	38	24.8	185	29.4	31	3	49
28,431.9	5	7.9	111	8.8	126	14.7	232	1.43	(50.3)	5.0	197	28.9	161	23.9	74	19	50

RANK 1989	1988		SALES $ millions	SALES % change from 1988	PROFITS $ millions	PROFITS Rank	PROFITS % change from 1988	ASSETS $ millions	ASSETS Rank	STOCKHOLDERS EQUITY $ millions	STOCKHOLDERS EQUITY Rank
51	49	**COCA-COLA** Atlanta	9,170.8	10.0	1,723.8	12	65.0	8,282.5	55	3,485.5	46
52	53	**RAYTHEON** Lexington, Mass.	8,796.1	7.4	528.8	46	8.0	5,338.3	84	2,426.1	66
53	50	**UNION CARBIDE** Danbury, Conn.	8,744.0	5.0	573.0	43	(13.4)	8,546.0	50	2,383.0	67
54	54	**COASTAL** Houston	8,685.6	6.1	170.1	152	8.1	8,773.3	47	1,793.0	94
55	51	**MONSANTO** St. Louis	8,681.0	4.7	679.0	37	14.9	8,604.0	49	3,941.0	39
56	63	**UNILEVER U.S.** New York[10,17]	8,113.8	16.6	139.0	170	4.4	9,379.0	42	2,145.2	73
57	65	**ARCHER DANIELS MIDLAND** Decatur, Ill.[3]	8,056.5	18.5	424.7	60	20.3	4,728.3	98	3,033.5	54
58	55	**ASHLAND OIL** Russell, Ky.[5]	8,016.6*	3.4	86.2	228	(61.5)	4,455.7	101	1,140.5	140
59	102	**TIME WARNER** New York[12]	7,642.0	69.6	(256.0)	472	(188.5)	24,791.0	16	6,756.0	16
60	59	**BORDEN** New York	7,593.4	4.8	(60.6)	453	(119.4)	4,824.9	94	1,645.4	104
61	61	**TEXTRON** Providence	7,440.1	4.6	259.2	102	10.6	13,790.4	28	2,547.1	63
62	62	**TRW** Cleveland	7,408.0	6.1	263.0	99	0.8	5,259.0	85	1,749.0	98
63	64	**BAXTER INTERNATIONAL** Deerfield, Ill.	7,399.0	7.8	446.0	57	14.9	8,503.0	51	4,246.0	34
64	58	**AMERICAN BRANDS** Old Greenwich, Conn.	7,264.7*	(2.8)	630.8	39	8.8	11,394.2	33	2,965.9	55
65	60	**HONEYWELL** Minneapolis	7,241.6¶	1.3	604.1	40	—	5,258.2	86	1,918.2	86
66	87	**DEERE** Moline, Ill.[6]	7,221.0	34.6	380.2	70	20.5	9,145.4	44	2,780.3	56
67	66	**EMERSON ELECTRIC** St. Louis[5]	7,071.3	6.3	588.0	41	11.2	5,408.0	82	3,073.4	53
68	81	**AMERICAN HOME PRODUCTS** New York[13]	6,747.0	22.7	1,102.2	18	18.2	5,681.5	75	1,970.0	84
69	71	**RALSTON PURINA** St. Louis[5]	6,711.6	8.7	422.5	62	8.9	4,381.7	102	831.7	179
70	74	**MERCK** Rahway, N.J.	6,698.4	12.8	1,495.4	14	23.9	6,756.7	64	3,520.6	45
71	68	**TEXAS INSTRUMENTS** Dallas	6,592.2	4.7	291.7	86	(20.4)	4,804.4	95	2,484.9	64
72	56	**LTV** Dallas	6,362.1	(15.5)	264.9	98	—	6,336.2	68	(4,919.8)	489
73	104	**WHIRLPOOL** Benton Harbor, Mich.	6,288.6	42.2	187.2	141	98.9	5,353.5	83	1,421.3	119
74	84	**NORTH AMERICAN PHILIPS** New York[14]	6,202.6	14.4	(178.0)	465	(325.0)	3,879.1	112	1,371.1	123
75	80	**REYNOLDS METALS** Richmond	6,201.0	11.4	532.7	44	10.5	5,555.6	81	2,684.1	60
76	69	**W.R. GRACE** New York	6,114.6	(1.4)	253.2	105	8.4	5,619.1	78	1,722.9	100
77	78	**HOECHST CELANESE** Bridgewater, N.J.[15]	6,016.0	5.9	267.0	96	6.8	6,062.0	71	3,299.0	48
78	72	**NCR** Dayton	5,956.0	(0.6)	412.0	65	(6.2)	4,500.0	100	1,985.0	83
79	67	**HANSON INDUSTRIES NA** Iselin, N.J.[5,16]	5,933.3	(8.6)	760.8	31	153.3	5,811.1	73	2,462.0	65
80	86	**PFIZER** New York	5,903.7	9.6	681.1	36	(13.9)	6,324.8	54	4,535.8	31
81	92	**JAMES RIVER CORP. OF VIRGINIA** Richmond[17]	5,901.6	15.8	255.1	104	22.0	5,558.1	80	2,345.8	68
82	89	**H.J. HEINZ** Pittsburgh[17]	5,831.9	11.2	440.2	58	14.0	4,001.8	108	1,777.2	96
83	79	**PPG INDUSTRIES** Pittsburgh	5,825.2	3.7	465.2	54	(0.5)	5,645.4	76	2,282.3	72
84	77	**MARTIN MARIETTA** Bethesda, Md.	5,814.3	1.5	306.9	81	(14.5)	3,505.4	128	1,355.0	124
85	76	**GENERAL MILLS** Minneapolis[8]	5,798.0	0.4	414.3	63	46.3	2,888.1	152	731.9	200
86	85	**KIMBERLY-CLARK** Dallas	5,777.1	7.1	423.8	61	11.9	4,923.0	91	2,085.8	77
87	88	**QUAKER OATS** Chicago[2]	5,724.3	7.4	203.0	131	(20.6)	3,221.9	139	1,137.1	141
88	95	**CAMPBELL SOUP** Camden, N.J.[18]	5,710.4	17.3	13.1	398	(95.2)	3,932.1	111	1,778.3	95
89	110	**AMERADA HESS** New York	5,589.0	32.9	476.3	51	283.5	6,867.4	62	2,560.6	61
90	94	**ABBOTT LABORATORIES** Abbott Park, Ill.	5,453.5	10.5	859.8	28	14.3	4,851.6	93	2,726.4	57
91	99	**BAYER USA** Pittsburgh[19]	5,424.7	15.0	153.9	161	23.7	4,562.1	99	1,907.5	88
92	93	**BASF** Parsippany, N.J.[20]	5,421.5	8.4	90.0‡	220	(39.7)	3,594.3	123	1,268.5	130
93	•	**LYONDELL PETROCHEMICAL** Houston	5,374.0	14.4	374.0	72	(31.1)	1,267.0	259	9.0	460
94	122	**STONE CONTAINER** Chicago	5,360.7	43.2	285.8	87	(16.4)	6,253.7	70	1,347.6	126
95	82	**BETHLEHEM STEEL** Bethlehem, Pa.	5,305.9	(3.3)	245.7	111	(39.0)	4,793.3	96	2,002.9	81
96	114	**APPLE COMPUTER** Cupertino, Calif.[5]	5,284.0	29.8	454.0	55	13.4	2,743.9	155	1,485.7	112
97	91	**CHAMPION INTERNATIONAL** Stamford, Conn.	5,254.2	2.5	432.4	59	(5.3)	7,530.8	59	3,588.5	44
98	75	**NORTHROP** Los Angeles	5,200.0	(10.3)	(80.5)	458	(177.3)	3,200.0	140	875.1	173
99	90	**DANA** Toledo	5,156.7	(0.3)	132.1	177	(18.6)	5,225.4	88	1,019.9	154
100	96	**LITTON INDUSTRIES** Beverly Hills[18]	5,130.3	5.5	178.3	143	6.7	5,257.7	87	1,267.7	131

The definitions, explanations, and footnotes underlying the figures in this directory are on page 367.

MARKET VALUE 3/9/90		PROFITS AS A PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1988	1979-89 annual growth rate		1989		1979-89 annual average			
$ millions	Rank	%	Rank	%	Rank	%	Rank	1989/$		%	Rank	%	Rank	%	Rank		1989
24,265.1	11	18.8	7	20.8	10	49.5	18	4.92	72.6	15.8	51	76.9	21	26.8	51	3	51
4,068.4	78	6.0	180	9.9	84	21.8	93	8.01	9.0	9.8	123	6.7	265	10.8	270	7	52
3,132.4	98	6.6	159	6.7	206	24.0	75	4.07	(16.6)	3.7	217	(6.0)	315	15.5	198	5	53
3,343.4	91	2.0	365	1.9	384	9.5§	322	1.81	0.6	–		46.4	84	13.9	222	18	54
7,240.9	41	7.8	112	7.9	163	17.2	182	10.03	21.3	8.2	148	45.5	90	19.8	121	5	55
N.A.		1.7	378	1.5	397	6.5	364	N.A.	–	–		–		–		23	56
5,711.5	55	5.3	210	9.0	119	14.0	241	2.27	22.2	18.3	32	75.2	22	16.1	185	8	57
2,049.2	139	1.1	398	1.9	385	7.6	355	1.55	(61.3)	(14.9)	315	22.4	193	12.7	238	18	58
5,897.8	53	(3.3)	453	(1.0)	428	(3.8)	414	(4.34)	(186.6)	–		13.6	224	22.3	93	20	59
4,660.4	73	(0.8)	428	(1.3)	432	(3.7)	413	(0.41)	(119.4)	–		19.3	203	29.6	30	8	60
2,223.7	129	3.5	305	1.9	388	10.2	310	2.91	9.0	2.6	228	7.8	258	12.0	249	1	61
3,007.8	101	3.6	301	5.0	267	15.0	223	4.31	0.5	3.6	219	23.2	190	14.3	216	7	62
6,212.9	51	6.0	179	5.2	258	10.5	306	1.50	14.5	5.9	182	45.7	87	9.7	277	22	63
6,165.1	52	8.7	87	5.5	248	20.9§	104	6.51	11.5	8.1	150	12.3	234	22.7	86	25	64
3,410.0	90	8.3	100	11.5	58	31.5	37	14.18	–	9.1	133	49.6	76	11.2	260	7	65
5,435.6	58	5.3	211	4.2	306	13.7	247	5.06	12.9	(0.1)	257	31.3	156	8.3	288	11	66
9,007.2	33	8.3	102	10.9	69	19.1	141	2.63	13.9	8.9	140	32.7	147	17.0	169	7	67
15,951.3	20	16.3	14	19.4	11	55.9	14	7.07	10.8	10.9	111	34.5	139	20.4	117	19	68
5,097.3	64	6.3	172	9.6	99	49.2§	19	6.44	14.4	18.4	31	3.4	278	26.6	54	8	69
27,085.4	8	22.3	5	22.1	7	42.5	22	3.78	23.9	16.2	49	37.5	127	23.9	73	19	70
3,015.6	100	4.4	253	6.1	229	11.7	284	3.04	(24.9)	1.9	238	(10.8)	344	3.9	316	7	71
162.9	389	4.2	270	4.2	305	–		2.06	–	(10.2)	301	(50.0)	411	(17.0)	353	15	72
2,299.4	124	3.0	333	3.5	331	13.2	255	2.70	98.5	5.8	185	38.4	124	18.7	143	7	73
N.A.		(2.9)	448	(4.6)	456	(13.0)	424	N.A.	–	–		N.A.		–		7	74
3,233.5	95	8.6	91	9.6	102	19.8	126	9.20	2.1	7.1	167	3.0	281	17.3	160	15	75
2,542.3	119	4.1	272	4.5	293	7.7§	351	2.97	8.0	1.7	239	31.6	152	11.0	267	5	76
N.A.		4.4	252	4.4	298	8.1	342	N.A.	–	–		N.A.		–		5	77
4,853.5	69	6.9	147	9.2	113	20.8	107	5.38	0.9	9.4	130	12.7	232	16.1	186	6	78
N.A.		12.8	30	13.1	36	30.9	40	N.A.	–	–		N.A.		–		5	79
9,960.1	29	11.5	41	8.2	148	15.0	224	4.04	(14.0)	9.5	125	24.2	188	17.2	163	19	80
1,917.5	146	4.3	259	4.6	289	10.9§	300	2.87	21.6	11.5	101	0.9	292	19.5	125	9	81
7,806.0	37	7.5	119	11.0	67	24.8	64	3.34	14.8	15.4	55	54.0	57	31.1	23	8	82
4,402.2	75	8.0	110	8.2	142	20.4	115	4.18	(1.9)	9.4	126	1.9	285	23.7	75	5	83
2,185.0	131	5.3	209	8.8	131	22.7	83	5.82	(13.8)	10.7	114	12.4	233	16.3	179	1	84
5,489.8	57	7.1	135	14.3	25	56.6	13	5.06	55.7	13.2	81	44.0	101	25.4	60	8	85
5,223.6	61	7.3	128	8.6	133	20.3	116	5.26	11.7	4.6	207	31.0	157	27.5	46	9	86
3,613.3	87	3.5	303	6.3	224	17.9	167	2.56	(20.0)	8.0	152	11.0	241	27.5	45	8	87
6,339.1	48	0.2	417	0.3	416	0.7	402	0.10	(95.3)	(20.5)	324	90.2	12	27.9	42	8	88
3,914.7	82	8.5	93	6.9	199	18.6	149	5.87	288.7	(0.3)	260	57.3	45	10.5	271	18	89
14,297.6	24	15.8	16	17.7	14	31.5	36	3.85	15.6	17.9	35	44.6	97	23.6	77	19	90
N.A.		2.8	338	3.4	337	8.1	343	N.A.	–	–		N.A.		–		5	91
N.A.		1.7	382	2.5	368	7.1	357	N.A.	–	–		N.A.		–		5	92
1,430.0	182	7.0	145	29.5	5	4,155.6	1	4.67	–	–		N.A.		–		5	93
1,280.4	195	5.3	205	4.6	290	21.2	99	4.76	(16.3)	24.4	10	(23.4)	381	21.9	102	9	94
1,382.6	186	4.6	241	5.1	263	12.3	274	2.93	(44.9)	(7.4)	296	(19.6)	370	1.6	327	15	95
4,775.2	71	8.6	90	16.5	17	30.6	42	3.53	14.6	–		(11.5)	345	–		6	96
2,637.7	114	8.2	104	5.7	241	12.0§	278	4.56	(5.0)	(0.3)	259	3.0	282	6.4	305	9	97
805.6	258	(1.5)	435	(2.5)	441	(9.2)	421	(1.71)	(177.0)	–		(33.6)	397	5.9	307	1	98
1,340.4	189	2.6	348	2.5	366	13.0	261	3.24	(18.8)	(0.3)	261	(7.2)	320	12.5	242	17	99
1,751.4	158	3.5	306	3.4	334	14.1	239	7.05	11.4	4.8	202	7.5	261	8.7	285	7	100

S1 100

THE FORTUNE 500

LARGEST U.S. INDUSTRIAL CORPORATIONS

101-150

RANK 1989	RANK 1988		SALES $ millions	SALES % change from 1988	PROFITS $ millions	PROFITS Rank	PROFITS % change from 1988	ASSETS $ millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ millions	STOCKHOLDERS' EQUITY Rank
101	107	**COOPER INDUSTRIES** Houston[21]	5,129.4	20.5	267.8	93	19.3	6,745.0	65	2,696.2	59
102	100	**CPC INTERNATIONAL** Englewood Cliffs, N.J.	5,129.3	9.1	327.5	77	13.3	3,704.7	117	1,217.6	134
103	83	**COLGATE-PALMOLIVE** New York	5,110.2	(6.8)	280.0	91	(11.9)	3,536.5	127	1,123.2	144
104	98	**SCOTT PAPER** Philadelphia	5,065.6	7.2	375.5	71	(6.3)	5,746.3	74	2,060.8	79
105	•	**CITGO PETROLEUM** Tulsa[22]	4,941.2	20.2	161.0	159	(2.8)	1,586.9	226	591.5	227
106	101	**AMERICAN CYANAMID** Wayne, N.J.	4,825.0	5.1	292.0	85	(4.5)	4,971.2	90	2,321.4	70
107	•	**WICKES** Santa Monica, Calif.[23]	4,801.9¶	–	(122.5)	463	–	3,573.3	124	1,107.8	146
108	106	**KELLOGG** Battle Creek, Mich.	4,666.2	7.3	470.2	53	(2.1)	3,390.4	134	1,634.4	106
109	105	**TELEDYNE** Los Angeles	4,664.2¶	6.0	258.9	103	(33.9)	3,447.1	131	2,326.9	69
110	103	**MEAD** Dayton	4,646.6	4.1	215.8	124	(38.8)	3,750.0	115	1,680.8	102
111	57	**BEATRICE** Chicago[24]	4,498.0	(40.1)	325.0‡	78	(38.6)	3,786.0	113	816.0	183
112	112	**BOISE CASCADE** Boise, Idaho	4,338.0	5.9	267.6	94	(7.5)	4,142.6	106	1,575.3	109
113	113	**NAVISTAR INTERNATIONAL** Chicago[6]	4,296.0	5.3	87.0	224	(64.3)	3,609.0	121	914.0	166
114	120	**WARNER-LAMBERT** Morris Plains, N.J.	4,272.0	9.3	412.7	64	21.3	2,859.8	153	1,129.8	143
115	108	**EATON** Cleveland	4,249.0¶	0.3	224.9	118	5.9	3,051.6	147	1,144.7	139
116	115	**ELI LILLY** Indianapolis	4,175.6	2.6	939.5	24	23.5	5,848.0	72	3,757.1	43
117	116	**INLAND STEEL INDUSTRIES** Chicago	4,146.7	1.9	119.7	189	(54.3)	3,008.5	149	1,495.1	110
118	119	**WHITMAN** Chicago	4,023.8	2.8	190.7	138	(18.3)	3,717.6	116	894.1	170
119	118	**DRESSER INDUSTRIES** Dallas[6]	4,022.9	2.1	170.0	153	8.4	3,056.1	146	1,608.2	108
120	117	**AMAX** New York	3,915.0	(0.7)	360.4	73	(51.4)	4,190.0	104	2,040.9	80
121	121	**COCA-COLA ENTERPRISES** Atlanta	3,888.5	0.4	71.7	247	(53.0)	4,731.9	97	1,680.1	103
122	127	**GREAT NORTHERN NEKOOSA** Norwalk, Conn.	3,863.1	7.7	321.1	79	(6.0)	4,115.4	107	1,803.5	93
123	130	**UNITED BRANDS** Cincinnati[25]	3,851.0	9.9	67.8	258	12.3	1,613.0	223	464.0	261
124	128	**GILLETTE** Boston	3,849.6	7.5	284.7	89	6.0	3,114.0	143	70.0	446
125	129	**OWENS-ILLINOIS** Toledo	3,692.0	3.4	(108.1)‡	461	–	5,098.3	89	(97.7)	474
126	144	**JOHNSON CONTROLS** Milwaukee[5]	3,689.6	19.0	97.5	212	(5.8)	2,415.0	174	977.9	159
127	123	**AMERICAN STANDARD** New York	3,631.4	(2.3)	(46.2)	449	–	3,541.9	126	72.9	444
128	•	**LEVI STRAUSS ASSOCIATES** San Francisco[26]	3,627.9	–	272.3	92	–	2,020.0	192	394.5	285
129	126	**GRUMMAN** Bethpage, N.Y.	3,558.8	(0.9)	67.3	259	(22.2)	2,591.1	162	817.8	182
130	134	**GANNETT** Arlington, Va.	3,523.2	6.3	397.5	68	9.1	3,782.8	114	1,995.8	82
131	138	**TIMES MIRROR** Los Angeles	3,517.5	7.9	298.0	83	(10.2)	3,947.5	110	1,877.2	90
132	135	**CUMMINS ENGINE** Columbus, Ind.	3,510.8	6.1	(6.1)	426	–	2,030.8	191	559.2	238
133	136	**FMC** Chicago	3,461.0	5.3	136.4‡	174	5.5	2,819.0	154	(70.6)	469
134	146	**INGERSOLL-RAND** Woodcliff Lake, N.J.	3,447.4	14.1	210.8	126	30.4	2,594.6	161	1,376.9	122
135	132	**AVON PRODUCTS** New York	3,395.9	0.9	54.6	280	–	2,098.0	185	228.3	358
136	143	**PACCAR** Bellevue, Wash.	3,372.9	8.4	241.9	113	37.6	3,067.1	145	1,007.3	155
137	150	**INTEL** Santa Clara, Calif.	3,280.7	14.1	391.0	69	(13.7)	3,994.0	109	2,548.8	62
138	133	**INTERCO** St. Louis[24]	3,277.8¶	(1.9)	70.1	251	(51.6)	1,775.3	211	(1,005.8)	486
139	147	**SCHERING-PLOUGH** Madison, N.J.	3,243.0	9.2	471.3	52	20.9	3,613.5	120	1,955.4	85
140	124	**AGWAY** DeWitt, N.Y.[2,27]	3,234.8	(11.2)	N.A.		–	1,701.3	214	255.2	349
141	187	**BLACK & DECKER** Towson, Md.[5,28]	3,221.3	41.2	30.0	345	(69.1)	6,258.1	69	720.7	201
142	175	**MASCO** Taylor, Mich.	3,150.5	29.2	220.9	121	(23.4)	3,640.8	119	1,858.4	91
143	149	**R.R. DONNELLEY & SONS** Chicago	3,127.6	8.7	221.9	120	8.1	2,507.3	166	1,445.8	115
144	157	**KERR-MCGEE** Oklahoma City	3,122.0	13.8	156.0	160	41.8	3,332.0	137	1,476.0	114
145	154	**HERCULES** Wilmington, Del.	3,121.3	11.4	(81.3)	459	(167.5)	3,653.2	118	1,897.2	89
146	216	**MAYTAG** Newton, Iowa[29]	3,088.8	61.8	131.5	178	(17.1)	2,436.3	173	938.2	164
147	145	**WANG LABORATORIES** Lowell, Mass.[2]	3,078.4	0.3	(424.3)	473	(557.7)	2,725.7	156	1,130.8	142
148	164	**AMERICAN PETROFINA** Dallas[30]	3,057.6	16.1	119.1	191	(10.4)	2,505.3	167	1,060.7	152
149	151	**OWENS-CORNING FIBERGLAS** Toledo	3,021.0	6.7	172.0	150	(9.0)	1,924.0	197	(435.0)	483
150	191	**SEAGOLD VINEYARDS HOLDING** New York[23,31,32]	3,004.9*	36.7	514.5	48	23.0	7,589.2	58	4,213.6	35

The definitions, explanations, and footnotes underlying the figures in this directory are on page 367.

MARKET VALUE 3/9/90		PROFITS AS A PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from	1979-89 annual growth rate		1989		1979-89 annual average			
$ millions	Rank	%	Rank	%	Rank	%	Rank	1989/$	1988	%	Rank	%	Rank	%	Rank		1989
4,511.2	74	5.2	212	4.0	315	9.9§	314	2.51	13.6	3.2	223	53.0	61	14.3	215	7	101
4,974.8	67	6.4	170	8.8	125	26.9	52	4.22	14.7	8.4	145	46.2	85	22.6	89	8	102
3,625.4	83	5.5	200	7.9	161	24.9	63	3.97	(14.4)	11.1	105	39.1	120	22.1	97	23	103
3,309.6	92	7.4	125	6.5	211	18.2	159	5.11	(2.3)	11.2	104	24.7	187	22.3	94	9	104
N.A.		3.3	320	10.1	81	27.2	48	N.A.	–	–		N.A.		–		18	105
5,050.7	65	6.1	177	5.9	237	12.6	270	3.12	(8.5)	5.9	180	17.6	208	16.5	177	5	106
N.A.		(2.6)	443	(3.4)	447	(11.1)	422	N.A.	–	–		N.A.		–		24	107
7,314.0	40	10.1	66	13.9	28	28.8	45	3.85	(1.3)	13.7	71	7.9	257	27.2	49	8	108
3,788.9	84	5.6	198	7.5	179	11.1	293	4.66	(31.5)	4.7	205	4.5	274	18.2	149	7	109
1,970.3	143	4.6	240	5.8	240	12.8	264	3.33	(38.0)	2.1	233	(3.7)	309	16.2	183	9	110
N.A.		7.2	130	8.6	136	39.8	25	2.50‡	(36.7)	–		N.A.		–		8	111
1,418.2	183	6.2	174	6.5	218	17.0	184	6.19	(2.4)	4.7	206	11.5	240	12.9	235	9	112
1,101.5	213	2.0	363	2.4	371	9.5	321	0.23	(72.6)	(32.7)	333	(27.9)	390	(19.9)	354	17	113
7,070.8	42	9.7	73	14.4	23	36.5	30	6.10	22.0	14.7	63	51.5	65	24.4	67	19	114
2,002.5	142	5.3	207	7.4	189	19.6	132	6.00	5.4	4.3	211	5.7	267	16.9	171	17	115
17,530.6	19	22.5	4	16.1	19	25.0	61	3.20	20.1	11.0	109	64.0	39	20.7	115	19	116
1,110.5	211	2.9	336	4.0	314	8.0	345	3.15	(57.4)	(6.7)	291	(15.9)	356	3.8	317	15	117
2,697.0	112	4.7	237	5.1	262	21.3	98	1.50	(31.5)	(4.5)	282	(17.2)	361	23.2	83	8	118
3,253.7	94	4.2	263	5.6	247	10.6	304	2.52	11.0	(1.5)	266	56.3	48	8.7	284	11	119
2,095.5	132	9.2	83	8.6	134	17.7	172	4.19	(50.2)	(4.3)	279	4.0	275	(4.9)	346	15	120
1,809.4	154	1.8	372	1.5	396	4.3	381	0.41	(60.2)	–		7.0	264	–		3	121
N.A.		8.3	103	7.8	170	17.8	169	5.78	(6.9)	11.9	95	61.3	41	23.6	79	9	122
723.7	274	1.8	374	4.2	304	14.6	233	1.70	15.6	11.5	102	7.5	260	18.5	145	8	123
4,927.2	68	7.4	126	9.1	114	373.1§	2	2.70	10.2	11.4	103	51.0	70	28.3	40	14	124
N.A.		(2.9)	449	(2.1)	437	–		N.A.	–	–		N.A.		–		4	125
1,176.7	205	2.6	346	4.0	313	10.0	313	2.55	(9.9)	3.6	218	(9.1)	332	11.8	253	10	126
N.A.		(1.3)	434	(1.3)	433	(63.3)	439	N.A.	–	–		N.A.		–		4	127
N.A.		7.5	122	13.5	33	64.9§	9	N.A.	–	–		N.A.		–		2	128
477.8	307	1.9	368	2.6	363	7.7§	352	1.91	(23.6)	6.4	174	(18.1)	366	7.9	290	1	129
6,378.5	47	11.3	46	10.5	74	19.9	123	2.47	9.3	10.5	118	25.4	180	18.8	139	20	130
4,746.1	72	8.5	94	7.5	177	15.9	204	2.30	(10.9)	7.9	153	11.6	238	18.1	150	20	131
474.4	311	(0.2)	425	(0.3)	425	(1.1)	408	(1.52)	–	–		(18.1)	365	9.3	281	11	132
1,253.6	198	3.9	285	4.8	271	–		3.79‡	5.3	(1.8)	268	10.2	246	24.9	64	5	133
2,827.0	108	6.1	176	8.1	152	15.3	218	3.95	31.7	2.8	225	50.7	73	14.5	213	11	134
1,936.9	145	1.6	383	2.6	362	23.9	77	0.34	–	(22.2)	326	95.3	9	6.8	298	23	135
1,526.4	176	7.2	134	7.9	164	24.0	76	6.90	40.8	7.6	156	10.4	244	17.5	156	17	136
7,645.5	38	11.9	33	9.8	88	15.3	216	2.07	(17.5)	13.2	82	45.3	91	11.9	251	7	137
19.4	417	2.1	358	4.0	316	–		1.53	(56.3)	(7.1)	294	(84.5)	416	(0.5)	333	10	138
9,037.1	32	14.5	23	13.0	38	24.1	74	4.18	20.1	7.3	162	54.5	56	23.3	81	19	139
N.A.		–		–		–		N.A.	–	–		N.A.		–		8	140
1,054.2	217	0.9	401	0.5	413	4.2	382	0.51	(69.1)	(13.8)	312	(14.0)	349	1.3	329	11	141
3,948.9	81	7.0	143	6.1	230	11.9	280	1.42	(32.4)	7.3	163	(0.7)	297	16.7	173	14	142
3,448.9	88	7.1	138	8.8	124	15.3	215	2.85	8.0	12.8	86	51.1	69	25.2	63	20	143
2,521.5	120	5.0	219	4.7	282	10.6	305	3.20	41.0	0.4	250	37.8	125	7.5	293	18	144
1,605.6	169	(2.6)	444	(2.2)	439	(4.3)	416	(1.76)	(169.0)	–		(8.0)	325	11.6	255	5	145
1,848.4	149	4.3	261	5.4	253	3.4§	389	1.27	(38.6)	4.1	214	5.2	271	18.8	138	7	146
1,008.3	224	(13.8)	471	(15.6)	472	(37.5)	433	(2.59)	(562.5)	–		(40.5)	401	(3.7)	344	6	147
1,198.2	203	3.9	286	4.8	279	11.2	292	7.81	(22.4)	0.1	254	12.8	230	11.5	257	18	148
963.5	233	5.7	195	8.9	120	–		4.08	(9.5)	1.3	242	12.9	229	22.9	85	4	149
N.A.		17.1	13	6.8	204	12.2	275	N.A.	–	–		N.A.		–		3	150

THE FORTUNE 500 LARGEST U.S. INDUSTRIAL CORPORATIONS

RANK 1989	RANK 1988		SALES $ millions	SALES % change from 1988	PROFITS $ millions	PROFITS Rank	PROFITS % change from 1988	ASSETS $ millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ millions	STOCKHOLDERS' EQUITY Rank
151	153	**FARMLAND INDUSTRIES** Kansas City, Mo.[27,33]	2,976.9	6.1	N.A.		—	1,182.4	265	458.5	262
152	162	**PITNEY BOWES** Stamford, Conn.	2,959.3	11.0	252.8**	106	3.9	5,611.1	79	1,428.3	118
153	125	**CONTROL DATA** Bloomington, Minn.	2,952.1	(18.6)	(680.4)	475	(40,123.5)	1,860.7	203	411.5	277
154	288	**JEFFERSON SMURFIT** St. Louis[34]	2,936.3	133.9	35.8‡	323	(75.2)	2,436.7	172	(921.6)	485
155	177	**UNIVERSAL** Richmond[2]	2,920.3	21.0	54.0	283	(11.0)	1,062.1	285	386.4	291
156	156	**UPJOHN** Kalamazoo, Mich.	2,916.3	6.2	176.0**	144	(50.2)	3,246.9	138	1,736.1	99
157	202	**COMPAQ COMPUTER** Houston	2,876.1	39.2	333.3	76	30.6	2,090.4	186	1,171.6	137
158	160	**ARMSTRONG WORLD INDUSTRIES** Lancaster, Pa.	2,864.0	6.9	187.6	140	15.3	2,033.0	189	976.5	160
159	137	**BRUNSWICK** Skokie, Ill.	2,826.1	(13.9)	(71.3)	456	(136.9)	1,984.8	194	776.1	190
160	161	**AMP** Harrisburg, Pa.	2,820.5	5.7	280.9	90	(12.0)	2,529.8	165	1,625.4	107
161	163	**UNION CAMP** Wayne, N.J.	2,761.3	3.8	299.4	82	1.4	3,417.3	133	1,755.3	97
162	158	**ETHYL** Richmond	2,754.9¶	1.4	231.3	115	0.1	5,631.7	77	901.3	168
163	201	**PENNZOIL** Houston	2,750.0¶	31.7	103.5	206	(93.0)	4,882.0	92	1,282.0	128
164	172	**REVLON GROUP** New York[35]	2,739.1	10.6	N.A.		—	N.A.		N.A.	
165	182	**PHELPS DODGE** Phoenix	2,726.4	17.5	267.0	95	(36.5)	2,504.6	168	1,350.1	125
166	176	**AIR PRODUCTS & CHEMICALS** Allentown, Pa.[5]	2,662.3	9.5	222.1	119	3.9	3,365.7	135	1,444.9	116
167	168	**ROHM & HAAS** Philadelphia	2,661.0	5.0	176.0	146	(23.5)	2,455.0	170	1,311.0	127
168	139	**QUANTUM CHEMICAL** New York	2,636.5	(18.5)	247.4	109	(35.4)	3,003.8	150	(172.3)	477
169	159	**ZENITH ELECTRONICS** Glenview, Ill.	2,610.7¶	(2.8)	(68.4)	455	(684.6)	918.3	320	398.2	284
170	178	**PREMARK INTERNATIONAL** Deerfield, Ill.	2,600.6	8.5	78.4	242	(25.5)	1,757.2	212	800.6	188
171	165	**NATIONAL STEEL** Pittsburgh[36]	2,576.6	(0.9)	83.2**	232	(5.7)	1,806.6	207	733.0	199
172	195	**WEST POINT-PEPPERELL** West Point, Ga.[5]	2,567.7¶	19.4	(19.3)‡	434	(122.9)	3,505.0	129	1,643.0	105
173	170	**VF** Wyomissing, Pa.	2,540.0	0.9	176.0	145	1.4	1,889.8	200	819.8	181
174	212	**TYSON FOODS** Springdale, Ark.[5]	2,538.2	31.1	100.6	209	23.5	2,586.1	163	447.7	266
175	185	**OLIN** Stamford, Conn.	2,530.0	9.6	124.0	185	26.5	1,904.0	199	[illegible]6.0	209
176	169	**B.F. GOODRICH** Akron	2,520.7	0.0	172.4	149	(11.9)	2,274.4	176	1,2[illegible].2	129
177	189	**PARKER HANNIFIN** Cleveland[2]	2,520.2	11.9	124.5	183	16.8	1,922.5	198	840.5	177
178	140	**ARMCO** Parsippany, N.J.	2,494.4	(22.7)	165.0	155	13.5	2,489.1	169	1,026.8	153
179	205	**BERKSHIRE HATHAWAY** Omaha	2,483.9	24.7	447.5	56	12.1	9,459.6	41	4,925.1	29
180	203	**HARRIS** Melbourne, Fla.[2]	2,476.7¶	20.1	21.3	374	(78.8)	2,557.8	164	947.2	162
181	198	**CORNING** Corning, N.Y.[37]	2,468.8	16.4	261.0	100	23.9	3,360.7	136	1,711.2	101
182	181	**TRIBUNE** Chicago	2,454.8	5.1	242.4	112	15.2	3,051.4	148	1,078.0	147
183	179	**LAND O'LAKES** Arden Hills, Minn.[27]	2,442.2¶	3.7	N.A.		—	721.2	358	267.9	343
184	485	**MAXXAM** Los Angeles	2,423.3	366.7	116.8	195	568.5	3,183.2	141	233.1	356
185	167	**HERSHEY FOODS** Hershey, Pa.	2,421.0	(5.5)	171.1	151	(20.0)	1,814.1	206	1,117.0	145
186	180	**ENGELHARD** Edison, N.J.	2,403.0	2.2	(77.5)	457	(221.6)	1,339.6	250	636.9	217
187	173	**NATIONAL SEMICONDUCTOR** Santa Clara, Calif.[8]	2,400.0¶	(2.8)	(23.2)	440	(137.0)	1,416.1	243	848.5	176
188	188	**VALHI** Dallas	2,381.2	5.7	103.3	207	20.3	3,098.1	144	287.4	331
189	192	**KNIGHT-RIDDER** Miami	2,342.6	6.8	247.2	110	58.1	2,134.6	182	917.1	165
190	186	**GEO. A. HORMEL** Austin, Minn.[5]	2,340.5	2.1	70.1	252	16.5	727.4	356	470.9	260
191	184	**BAKER HUGHES** Houston[3]	2,328.0	0.5	85.0	231	(17.7)	2,065.9	188	1,003.4	156
192	193	**CENTRAL SOYA** Fort Wayne	2,318.5	5.9	15.1	394	32.9	789.4	342	391.8	287
193	197	**WESTVACO** New York[6]	2,296.8	7.2	233.1	114	16.3	2,960.9	151	1,488.4	111
194	183	**MORTON THIOKOL** Chicago[2,35,38]	2,269.0	(2.0)	N.A.		—	N.A.		N.A.	
195	•	**UNIROYAL GOODRICH TIRE** Akron	2,266.9	3.5	N.A.		—	1,798.7	208	188.4	385
196	207	**ASARCO** Trenton	2,248.6	13.1	231.2	116	11.5	2,440.8	171	1,438.0	117
197	190	**MANVILLE** Denver	2,228.1	0.9	196.8	134	—	2,600.0	160	1,000.0	157
198	152	**USG** Chicago	2,201.0	(21.7)	28.0	354	(77.7)	1,602.0	225	(1,438.0)	488
199	174	**BURLINGTON HOLDINGS** New York[5]	2,197.7	(10.4)	(23.0)	439	—	2,115.1	184	(16.4)	462
200	213	**ILLINOIS TOOL WORKS** Chicago	2,172.7	12.6	163.8	157	17.0	1,688.0	215	871.1	175

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The definitions, explanations, and footnotes underlying the figures in this directory are on page 367.

MARKET VALUE 3/9/90		PROFITS AS A PERCENT OF						EARNINGS PER SHARE						TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCK-HOLDERS' EQUITY			% change from	1979-89 annual growth rate		1989		1979-89 annual average			
$ millions	Rank	%	Rank	%	Rank	%	Rank	1989/$	1988	%	Rank	%	Rank	%	Rank				1989
N.A.		—		—		—		N.A.	—	—		N.A.		—		8	151
3,624.4	86	8.5	92	4.5	294	17.7	170	3.19**	3.6	12.2	90	13.6	225	23.5	80	6	152
823.0	254	(23.0)	474	(36.6)	474	(165.3)	444	(16.11)	(53,800.0)	—		(7.6)	323	(3.0)	340	6	153
N.A.		1.2	393	1.5	398	—	—	N.A.	—	—		N.A.		—		9	154
535.3	292	1.9	371	5.1	265	14.0	242	3.19	(10.4)	8.6	144	11.9	237	19.8	122	25	155
6,621.4	44	6.0	178	5.4	252	10.1	311	0.95**	(50.0)	1.3	243	37.6	126	20.9	111	19	156
3,750.6	85	11.6	39	15.9	20	28.4	47	7.77	23.3	—		33.3	144	—		6	157
1,441.2	181	6.6	160	9.2	112	19.2	140	3.92	11.7	11.8	98	9.2	249	21.4	105	24	158
1,242.4	199	(2.5)	442	(3.6)	451	(9.2)	420	(0.81)	(136.8)	—		(14.1)	351	27.8	43	27	159
5,191.2	63	10.0	69	11.1	65	17.3	177	2.63	(11.1)	8.9	138	2.8	283	15.2	202	7	160
2,419.2	121	10.8	53	8.8	130	17.1	183	4.35	2.4	7.7	154	11.5	239	15.0	206	9	161
3,087.9	99	8.4	98	4.1	308	25.7§	59	1.93	1.0	12.1	93	37.0	128	27.6	44	5	162
2,988.4	102	3.8	290	2.1	379	6.9§	360	2.42	(93.6)	(6.4)	289	28.0	166	14.6	212	18	163
N.A.		—		—		—		N.A.	—	—		N.A.		—		23	164
2,077.9	133	9.8	71	10.7	72	19.8	127	7.59	(42.3)	4.1	213	32.2	148	9.9	276	15	165
2,775.2	110	8.3	99	6.6	209	15.4	214	4.04	3.6	8.9	139	19.7	201	12.8	237	5	166
2,051.2	138	6.6	157	7.2	193	13.4	251	2.65	(23.4)	7.2	166	4.6	273	19.8	123	5	167
497.4	303	9.4	79	8.2	143	—		9.85	(31.7)	9.4	127	(43.7)	406	14.2	218	5	168
243.9	364	(2.6)	445	(7.4)	466	(17.2)	428	(2.56)	(668.9)	—		(32.9)	396	3.7	319	7	169
915.0	242	3.0	330	4.5	296	9.8	316	2.24	(26.1)	—		(0.4)	296	—		21	170
N.A.		3.2	322	4.6	288	11.4	290	N.A.	—	—		N.A.		—		15	171
N.A.		(0.8)	426	(0.6)	426	(1.2)	409	N.A.	—	—		N.A.		—		24	172
1,826.6	151	6.9	146	9.3	111	21.5	95	2.72	6.7	18.8	27	13.9	223	32.9	18	2	173
1,821.4	152	4.0	283	3.9	319	22.5	88	1.55	39.6	25.9	7	44.5	99	43.4	5	8	174
1,123.3	208	4.9	229	6.5	214	18.6	147	6.02	30.0	7.3	164	21.6	196	17.8	153	5	175
1,026.6	222	6.8	150	7.6	174	13.4§	250	6.48	(12.7)	2.9	224	(16.6)	359	13.2	230	5	176
1,399.0	184	4.9	223	6.5	217	14.8	230	2.55	15.9	4.3	210	(7.5)	322	11.1	263	11	177
895.5	246	6.6	156	6.6	208	16.1	197	1.78	13.4	(9.5)	300	10.2	245	(5.8)	348	15	178
8,483.7	35	18.0	9	4.7	280	9.1	330	390.01	12.0	25.1	9	84.6	16	39.1	8	20	179
1,256.0	197	0.9	403	0.8	405	2.3	393	0.55	(78.0)	(13.9)	314	26.2	176	2.8	324	7	180
4,111.7	77	10.6	55	7.8	171	15.3	220	2.80	19.7	4.7	203	27.4	169	15.4	199	4	181
2,951.8	103	9.9	70	7.9	159	22.5	87	3.17	14.0	—		24.2	189	—		20	182
N.A.		—		—		—		N.A.	—	—		N.A.		—		8	183
321.0	348	4.8	232	3.7	325	50.1	16	12.97	565.1	14.6	64	92.8	10	15.6	193	15	184
2,840.9	106	7.1	139	9.4	106	15.3	217	1.90	(19.8)	11.7	99	41.3	112	28.8	36	8	185
827.8	252	(3.2)	451	(5.8)	462	(12.2)	423	(1.72)	(221.1)	—		14.6	222	—		5	186
756.3	264	(1.0)	432	(1.6)	435	(2.7)	411	(0.32)	(166.7)	—		(25.6)	385	(0.6)	334	7	187
1,895.6	147	4.3	258	3.3	341	36.0	31	0.91	21.3	17.6	37	51.4	66	14.5	214	5	188
2,858.6	105	10.6	56	11.6	56	27.0	50	4.71	70.7	13.4	77	31.9	150	19.0	133	20	189
1,325.7	191	3.0	332	9.6	100	14.9	227	1.83	16.6	8.7	143	56.1	50	26.9	50	8	190
3,231.4	96	3.7	296	4.1	307	8.5	335	0.66	(19.5)	(8.6)	299	86.7	14	3.0	321	11	191
N.A.		0.7	408	1.9	387	3.9	384	N.A.	—	—		N.A.		—		8	192
1,819.7	153	10.2	63	7.9	165	15.7	208	3.45	11.3	9.7	124	7.7	259	17.1	165	9	193
N.A.		—		—		—		N.A.	—	—		N.A.		—		5	194
N.A.		—		—		—		N.A.	—	—		N.A.		—		21	195
1,227.3	201	10.3	62	9.5	105	16.1	196	5.50	11.8	(4.3)	280	14.7	219	(0.2)	332	16	196
412.3	326	8.8	86	7.6	176	19.7	130	1.48	—	(26.7)	328	28.1	165	(24.4)	356	4	197
231.3	367	1.3	392	1.7	390	—		0.51	(78.6)	(12.3)	307	(20.0)	372	19.3	128	4	198
N.A.		(1.0)	433	(1.1)	429	—		(1.73)	—	—		N.A.		—		24	199
2,634.9	115	7.5	121	9.7	93	18.8	143	3.06	15.0	13.8	70	30.9	158	24.7	66	14	200

LARGEST U.S. INDUSTRIAL CORPORATIONS

RANK 1989	1988		SALES $ millions	SALES % change from 1988	PROFITS $ millions	PROFITS Rank	PROFITS % change from 1988	ASSETS $ millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ millions	STOCKHOLDERS' EQUITY Rank
201	226	**AMDAHL** Sunnyvale, Calif.	2,153.7	19.5	153.0	162	(31.5)	2,233.7	179	1,176.0	136
202	208	**DOVER** New York	2,136.2	9.3	144.0	168	(1.2)	1,406.4	244	746.8	195
203	209	**SHERWIN-WILLIAMS** Cleveland	2,130.3	9.2	108.9	200	7.8	1,375.0	247	667.6	208
204	200	**TEMPLE-INLAND** Diboll, Texas	2,124.0	1.2	207.4	128	4.1	7,248.8	60	1,258.9	132
205	206	**MCDERMOTT** New Orleans[39,40]	2,121.4	6.5	7.8	408	(64.7)	2,687.9	158	688.0	205
206	224	**DIAMOND SHAMROCK** San Antonio[41]	2,090.9	15.9	28.1‡	353	(47.5)	1,026.7	294	270.6	339
207	210	**SEQUA** New York	2,072.8	6.4	55.9	278	(18.6)	1,961.3	196	700.5	203
208	217	**LOUISIANA-PACIFIC** Portland, Ore.	2,035.0	6.9	192.6	135	(35.7)	2,031.7	190	1,176.5	135
209	225	**MAPCO** Tulsa	2,018.7	12.0	116.2	197	(0.8)	1,480.6	236	407.6	278
210	211	**FREEPORT-MCMORAN** New Orleans	2,014.8	3.6	130.7	180	(57.9)	3,560.9	125	391.0	289
211	204	**GENCORP** Fairlawn, Ohio[26]	2,001.0	(2.3)	210.0	127	200.0	1,270.0	257	155.0	405
212	215	**STANLEY WORKS** New Britain, Conn.	1,980.8	3.8	117.7	193	13.7	1,491.2	234	674.1	207
213	239	**TYCO LABORATORIES** Exeter, N.H.[8]	1,971.1	23.0	91.3	219	37.3	1,399.4	245	490.9	254
214	243	**HOLLY FARMS** Memphis[8,42]	1,963.7	24.0	43.7	305	20.6	823.4	335	426.3	273
215	199	**MACK TRUCKS** Allentown, Pa.	1,958.0	(6.9)	(185.4)	466	(683.3)	1,616.2	222	340.6	304
216	232	**CABOT** Waltham, Mass.[5]	1,943.7	15.9	18.1	387	(70.1)	1,417.4	242	489.2	256
217	214	**TRINOVA** Maumee, Ohio	1,942.3	1.2	32.3	337	(63.2)	1,361.5	249	651.3	213
218	218	**POLAROID** Cambridge, Mass.	1,941.9	4.2	145.0	165	–	1,776.7	210	148.8	408
219	227	**GENERAL SIGNAL** Stamford, Conn.	1,925.2	9.4	78.5	241	211.3	1,324.3	251	506.1	250
220	220	**BECTON DICKINSON** Franklin Lakes, N.J.[5]	1,921.1	4.0	213.6	125	31.9	2,270.1	177	1,071.5	148
221	221	**CROWN CORK & SEAL** Philadelphia	1,909.8	4.1	94.2	215	0.8	1,655.1	220	810.6	185
222	222	**SPRINGS INDUSTRIES** Fort Mill, S.C.	1,909.3	4.6	64.8	264	22.7	1,188.4	264	585.1	229
223	229	**WILLAMETTE INDUSTRIES** Portland, Ore.	1,891.8	10.2	191.1	137	18.6	1,604.3	224	901.0	169
224	231	**INTERNATIONAL MULTIFOODS** Minneapolis[24]	1,883.5	10.9	35.1	325	6.3	716.0	362	297.0	329
225	•	**READER'S DIGEST ASS'N** Pleasantville, N.Y.[2]	1,870.8	9.3	151.5	164	6.5	1,173.7	266	449.2	265
226	248	**PENN CENTRAL** Cincinnati	1,833.3	18.5	174.1	147	68.4	3,178.2	142	1,826.8	92
227	228	**NEW YORK TIMES** New York	1,807.1	3.0	266.6	97	59.0	2,187.5	181	1,067.1	149
228	235	**MID-AMERICA DAIRYMEN** Springfield, Mo.[27]	1,797.7	8.6	N.A.		–	425.7	443	141.5	410
229	275	**CYPRUS MINERALS** Englewood, Colo.	1,790.1	34.9	250.1	108	47.1	1,841.4	204	1,379.5	121
230	223	**MCGRAW-HILL** New York	1,789.0	(1.6)	47.8**	291	(74.2)	2,208.2	180	880.2	172
231	249	**ADOLPH COORS** Golden, Colo.	1,770.0*	16.3	13.1	397	(72.0)	1,530.8	232	1,060.9	151
232	327	**SUN MICROSYSTEMS** Mountain View, Calif.[2]	1,769.2	68.2	60.8	270	(8.4)	1,269.1	258	661.8	212
233	244	**AVERY INTERNATIONAL** Pasadena, Calif.[26]	1,732.4	9.5	86.5	226	11.3	1,142.1	271	538.6	242
234	233	**SQUARE D** Palatine, Ill.	1,722.8	4.0	101.9	208	(14.3)	1,381.9	246	556.1	239
235	238	**DOW JONES** New York	1,714.9	7.0	317.0	80	38.9	2,688.3	157	1,405.2	120
236	171	**HILLSBOROUGH HOLDINGS** Tampa[8]	1,706.5¶	(31.9)	(186.3)	467	–	3,461.8	130	(196.0)	478
237	•	**HARCOURT BRACE JOVANOVICH** Orlando, Fla.	1,702.5¶	(4.5)	72.1‡	245	–	2,644.4	159	(1,377.0)	487
238	148	**HENLEY GROUP** Hampton, N.H.	1,693.0	(41.7)	(187.0)	468	–	3,427.0	132	1,165.0	138
239	236	**MASCO INDUSTRIES** Taylor, Mich.	1,686.6	2.1	56.6**	276	(31.1)	2,235.9	178	389.4	290
240	247	**DEAN FOODS** Franklin Park, Ill.[8]	1,686.0	8.6	60.4	271	41.3	586.7	389	293.2	330
241	253	**MURPHY OIL** El Dorado, Ark.	1,683.7	14.3	46.6	296	20.1	2,074.8	187	769.6	191
242	237	**OUTBOARD MARINE** Waukegan, Ill.[5]	1,678.0	4.5	70.3	250	(9.4)	1,254.4	260	642.7	215
243	251	**SUNDSTRAND** Rockford, Ill.	1,666.1	12.8	114.2	199	–	1,502.9	233	573.0	231
244	240	**SONOCO PRODUCTS** Hartsville, S.C.	1,655.8	3.5	103.6	205	7.6	995.1	304	511.6	249
245	265	**EG&G** Wellesley, Mass.	1,655.1	17.7	69.8	253	1.7	643.4	376	349.0	300
246	278	**TANDEM COMPUTERS** Cupertino, Calif.[5]	1,643.9	25.0	118.3	192	25.2	1,618.8	221	989.1	158
247	•	**GREAT AMER. MGMT. & INV.** Chicago[18,43]	1,643.1	34.3	2.2	415	(75.0)	1,552.3	229	193.8	382
248	257	**E-SYSTEMS** Dallas	1,632.9	13.5	83.0	233	11.3	852.1	329	561.1	237
249	266	**FLEETWOOD ENTERPRISES** Riverside, Calif.[17]	1,632.0	16.1	70.5	249	46.1	717.9	361	400.6	283
250	234	**COLT INDUSTRIES** New York	1,618.0	(2.3)	119.2	190	30.9	934.7	317	(722.8)	484

The definitions, explanations, and footnotes underlying the figures in this directory are on page 367.

MARKET VALUE 3/9/90		PROFITS AS A PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCK-HOLDERS' EQUITY			% change from 1988	1979-89 annual growth rate		1989		1979-89 annual average			
$ millions	Rank	%	Rank	%	Rank	%	Rank	1989/$		%	Rank	%	Rank	%	Rank		1989
1,687.5	164	7.1	137	6.8	201	13.0	259	1.39	(33.2)	18.5	29	(28.6)	392	9.6	278	6	201
2,279.7	125	6.7	152	10.2	77	19.3	139	2.28	2.7	11.0	106	27.4	170	18.9	136	11	202
1,446.0	180	5.1	215	7.9	160	16.3	193	2.52	9.6	20.2	22	38.6	122	29.8	29	5	203
1,751.8	157	9.8	72	2.9	350	16.5	191	3.75	4.9	–		48.9	77	–		9	204
N.A.		0.4	413	0.3	417	1.1	400	N.A.	–	–		N.A.		–		14	205
560.0	291	1.3	389	2.7	356	8.2§	339	2.20‡	2.8	–		67.1	31	–		18	206
646.8	283	2.7	342	2.8	351	8.0	346	5.10	(15.6)	3.5	220	28.2	164	13.5	226	1	207
1,653.1	166	9.5	78	9.5	104	16.4	192	5.04	(35.7)	5.4	188	57.3	46	13.3	229	9	208
1,489.8	179	5.8	191	7.8	168	28.5	46	3.04	3.4	4.7	204	49.9	75	12.1	248	18	209
1,781.3	155	6.5	165	3.7	324	33.4	33	2.17	(47.5)	1.9	237	25.9	177	9.4	280	16	210
380.8	331	10.5	59	16.5	18	135.5	4	6.61	201.8	20.8	20	(25.6)	384	11.6	254	1	211
1,556.2	173	5.9	181	7.9	162	17.5	175	2.71	12.9	6.7	171	40.9	114	14.7	210	14	212
2,025.2	141	4.6	242	6.5	213	18.6	150	2.31	19.7	12.5	87	41.9	108	33.5	16	15	213
N.A.		2.2	353	5.3	254	10.3	308	2.40	16.5	1.7	240	N.A.		–		8	214
200.7	382	(9.5)	467	(11.5)	469	(54.4)	437	(6.24)	(683.2)	–		(53.5)	412	–		17	215
824.8	253	0.9	402	1.3	400	3.7	388	0.55	(75.4)	(13.2)	310	(1.7)	301	12.6	240	5	216
898.5	245	1.7	381	2.4	373	5.0	374	0.95	(62.6)	(5.1)	283	(8.7)	329	15.5	196	11	217
2,684.1	113	7.5	123	8.2	150	97.4	6	1.96	–	13.6	75	25.9	178	15.9	190	22	218
1,024.1	223	4.1	276	5.9	235	15.5	211	4.12	352.7	1.6	241	5.2	270	6.4	304	7	219
2,306.2	123	11.1	49	9.4	108	19.9	121	5.40	34.7	13.6	72	21.2	197	16.3	181	22	220
1,495.6	178	4.9	225	5.7	243	11.6	286	3.58	6.2	8.7	142	14.9	217	18.5	146	14	221
643.4	285	3.4	312	5.5	251	11.1	296	3.64	22.1	6.2	176	25.4	181	20.1	119	24	222
1,372.8	187	10.1	65	11.9	52	21.2	100	7.52	18.6	10.9	110	28.5	163	17.2	162	9	223
365.3	336	1.9	370	4.9	269	11.8	282	2.49	10.2	4.9	198	8.7	252	15.2	201	8	224
2,708.9	111	8.1	106	12.9	40	33.7	32	N.A.	–	–		N.A.		–		20	225
1,738.9	161	9.5	76	5.5	250	9.5	320	2.48	69.9	11.9	94	15.2	215	14.1	204	15	226
1,864.0	148	14.8	22	12.2	47	25.0	62	3.39	63.0	20.9	19	0.3	293	23.6	78	20	227
N.A.		–		–		–		N.A.	–	–		N.A.		–		8	228
1,030.8	220	14.0	27	13.6	32	18.1	161	6.06	44.1	–		25.3	182	–		15	229
2,604.4	116	2.7	345	2.2	377	5.4	371	0.98**	(74.4)	(4.5)	281	(6.1)	316	18.5	144	20	230
668.8	279	0.7	406	0.9	404	1.2	397	0.36	(71.9)	(15.5)	319	1.3	291	6.5	303	3	231
2,047.4	140	3.4	310	4.8	277	9.2	326	0.76	(15.1)	–		3.8	277	–		6	232
1,227.4	200	5.0	220	7.6	175	16.1	198	1.96	10.7	12.8	85	45.2	92	24.7	65	9	233
1,328.6	190	5.9	183	7.4	188	18.3	158	3.98	(10.4)	2.7	226	15.4	213	14.2	217	7	234
2,836.1	107	18.5	8	11.8	53	22.6	86	3.15	34.0	19.1	26	15.0	216	19.7	124	20	235
N.A.		(10.9)	469	(5.4)	460	–		N.A.	–	–		N.A.		–		15	236
200.5	383	4.2	262	2.7	358	–		0.17‡	–	(15.4)	317	(49.3)	410	20.8	112	20	237
764.2	261	(11.0)	470	(5.5)	461	(16.1)	425	(9.44)	–	–		N.A.		–		1	238
475.1	310	3.4	315	2.5	364	14.5	234	0.70**	(24.7)	–		(28.2)	391	–		17	239
863.8	249	3.6	299	10.3	76	20.6	110	2.28	42.5	16.8	46	13.5	226	32.6	19	8	240
1,567.3	171	2.8	340	2.2	375	6.0	368	1.37	20.2	(6.8)	293	43.3	102	7.2	296	18	241
476.0	309	4.2	267	5.6	244	10.9	298	3.64	(9.9)	13.8	69	(14.0)	348	16.0	188	27	242
1,280.9	194	6.9	148	7.6	173	19.9	122	6.17	–	4.4	209	33.4	143	9.4	279	1	243
1,497.6	177	6.3	173	10.4	75	20.2	117	2.36	7.3	14.8	62	10.5	243	28.4	39	9	244
1,101.0	214	4.2	265	10.9	70	20.0	120	2.40	4.3	11.8	96	20.7	200	12.5	245	22	245
2,882.8	104	7.2	132	7.3	192	12.0	279	1.17	21.9	28.1	5	36.3	131	20.6	116	6	246
266.7	359	0.1	419	0.1	420	1.1	401	0.06	(92.7)	(28.2)	330	31.5	153	22.1	95	5	247
1,005.0	226	5.1	216	9.7	90	14.8	231	2.65	10.4	13.0	83	7.3	262	16.3	180	7	248
515.9	299	4.3	260	9.8	86	17.6	173	3.06	47.1	11.8	97	(1.9)	304	21.3	107	17	249
N.A.		7.4	127	12.7	43	–		N.A.	–	–		N.A.		–		17	250

THE FORTUNE 500 LARGEST U.S. INDUSTRIAL CORPORATIONS

RANK 1989	1988		SALES $ millions	% change from 1988	PROFITS $ millions	Rank	% change from 1988	ASSETS $ millions	Rank	STOCKHOLDERS' EQUITY $ millions	Rank
251	271	**ARVIN INDUSTRIES** Columbus, Ind.	1,616.5	18.4	18.4	385	419.0	1,129.8	276	358.3	298
252	242	**WITCO** New York	1,609.0	1.5	35.0	326	(61.9)	1,139.3	274	571.6	233
253	230	**HIMONT** Wilmington, Del.[35]	1,600.0	(6.5)	N.A.		–	N.A.		N.A.	
254	252	**DOW CORNING** Midland, Mich.	1,574.5	6.6	162.8	158	8.2	1,678.1	218	872.1	174
255	260	**NATIONAL SERVICE INDUSTRIES** Atlanta[33]	1,539.5	8.9	94.7	214	10.0	887.8	324	612.7	221
256	316	**TECUMSEH PRODUCTS** Tecumseh, Mich.	1,535.0	40.4	82.6	234	17.7	1,034.1	291	682.3	206
257	264	**NORTON** Worcester, Mass.	1,534.6	8.8	105.1**	202	9.9	1,161.3	269	608.0	224
258	245	**TIMKEN** Canton, Ohio	1,533.0	(1.4)	55.3	279	(16.0)	1,566.0	227	1,064.8	150
259	241	**PRIME COMPUTER** Natick, Mass.	1,517.9	(4.8)	(230.2)	470	(1,312.4)	N.A.		N.A.	
260	256	**LORAL** New York[39]	1,499.9¶	4.1	87.6	223	17.9	1,461.5	238	517.9	246
261	279	**LAFARGE** Reston, Va.[44]	1,497.2	14.4	100.0	210	7.0	1,543.5	230	802.5	186
262	298	**HARNISCHFEGER INDUSTRIES** Brookfield, Wis.[6]	1,482.8	24.9	70.6	248	389.5	1,369.9	248	513.9	247
263	277	**GENERAL INSTRUMENT** New York[24]	1,481.5¶	12.6	85.5	229	29.2	1,309.4	253	622.0	218
264	263	**LORILLARD** Mineola, N.Y.[45]	1,475.3*	4.6	398.8	67	8.3	970.4	307	412.5	275
265	286	**CLOROX** Oakland[2]	1,471.2	16.8	124.1	184	(6.4)	1,213.1	262	786.2	189
266	281	**ECHLIN** Branford, Conn.[33]	1,468.2	13.4	44.4	302	(28.4)	1,034.3	290	640.6	216
267	255	**CRANE** New York	1,455.6	0.3	55.9	277	(10.5)	653.8	373	283.8	333
268	262	**BOWATER** Darien, Conn.	1,450.0	2.8	144.6	166	(12.0)	2,294.2	175	907.1	167
269	269	**WASHINGTON POST** Washington, D.C.	1,444.1	5.6	197.9	132	(26.5)	1,532.2	231	941.5	163
270	309	**TOSCO** Santa Monica, Calif.	1,440.5	26.1	40.5	312	(55.3)	937.9	316	269.6	341
271	261	**TEKTRONIX** Beaverton, Ore.[8]	1,438.5	1.9	18.9	382	–	1,023.0	295	497.3	252
272	267	**ESSELTE BUSINESS SYSTEMS** Garden City, N.Y.[46]	1,432.1	2.3	54.5	281	(7.6)	1,142.0	272	502.1	251
273	283	**CLARK EQUIPMENT** South Bend, Ind.	1,422.0	11.2	68.9	254	49.5	1,012.1	298	491.6	253
274	270	**INSPIRATION RESOURCES** New York	1,419.6	3.9	25.2	366	(40.0)	915.1	322	439.1	269
275	246	**RELIANCE ELECTRIC** Cleveland	1,411.0	(9.1)	49.0‡	290	104.2	1,140.0	273	11.0	459
276	299	**LIZ CLAIBORNE** New York	1,410.7	19.1	164.6	156	49.2	848.5	330	611.7	223
277	273	**HASBRO** Pawtucket, R.I.	1,409.7	5.2	92.2	218	27.3	1,246.5	261	802.3	187
278	290	**YORK HOLDINGS** York, Pa.	1,409.3	14.1	(2.3)**	424	–	1,046.8	287	(18.6)	463
279	308	**CROWN CENTRAL PETROLEUM** Baltimore	1,402.8	22.0	21.0	375	(45.3)	623.7	380	306.5	323
280	•	**AMOSKEAG** Boston[47]	1,402.0	1.9	7.0	410	96.0	939.0	313	144.1	409
281	285	**SEAGATE TECHNOLOGY** Scotts Valley, Calif.[2]	1,382.3	9.2	0.3	422	(99.5)	1,076.8	284	442.5	268
282	284	**CERTAINTEED** Valley Forge, Pa.[48]	1,364.9	7.8	30.4	342	(46.5)	1,125.6	277	746.7	196
283	292	**NATIONAL GYPSUM** Dallas[44]	1,364.1	11.7	(40.7)**	447	–	1,443.8	239	36.3	455
284	282	**HARSCO** Wormleysburg, Pa.	1,351.2	5.6	11.4	403	(63.5)	978.2	305	394.5	286
285	297	**RUBBERMAID** Wooster, Ohio	1,348.9	13.0	116.4	196	17.2	915.4	321	598.4	225
286	289	**CYCLOPS INDUSTRIES** Pittsburgh	1,346.8	7.7	36.2	322	26.6	523.5	411	72.4	445
287	305	**VARIAN ASSOCIATES** Palo Alto, Calif.[5]	1,344.8	14.9	31.5	338	13.5	931.3	318	427.3	272
288	268	**WEIRTON STEEL** Weirton, W.Va.	1,337.8	(3.3)	16.0‡	392	(78.6)	946.4	312	328.1	312
289	295	**FIGGIE INTERNATIONAL** Willoughby, Ohio	1,332.5	11.0	62.9	267	1.7	1,027.2	293	316.5	318
290	272	**DATA GENERAL** Westboro, Mass.[5]	1,324.3	(3.0)	(119.7)	462	–	1,040.2	288	522.1	245
291	259	**NORTEK** Providence	1,323.5¶	(7.2)	(12.5)**	430	(163.8)	836.8	332	218.0	363
292	333	**FRUIT OF THE LOOM** Chicago	1,320.9	31.5	72.0	246	6.5	1,678.1	202	326.5	313
293	296	**DELUXE** St. Paul	1,320.6	10.4	152.6	163	6.5	847.0	331	630.6	219
294	304	**HARTMARX** Chicago[26]	1,312.0	11.7	17.4	388	(54.2)	908.0	323	360.1	297
295	313	**FEDERAL PAPER BOARD** Montvale, N.J.	1,310.9	17.4	205.5	130	43.4	1,882.5	201	811.9	184
296	303	**AMERICAN GREETINGS** Cleveland[24]	1,275.4	8.6	44.3	303	32.6	1,087.6	282	565.0	236
297	323	**NUCOR** Charlotte, N.C.	1,269.0	19.6	57.8	274	(47.2)	1,033.8	292	584.4	230
298	293	**E.W. SCRIPPS** Wilmington, Del.	1,266.4	4.3	89.3	221	27.5	1,564.7	228	643.9	214
299	300	**MCCORMICK** Hunt Valley, Md.[26]	1,263.1	6.7	135.5	175	217.6	864.5	327	346.2	301
300	•	**DURACELL HOLDINGS** Bethel, Conn.[2]	1,253.7	–	(105.9)	460	–	2,133.6	183	231.1	357

The definitions, explanations, and footnotes underlying the figures in this directory are on page 367.

MARKET VALUE 3/9/90		PROFITS AS A PERCENT OF						EARNINGS PER SHARE						TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCK-HOLDERS' EQUITY			% change from	1979-89 annual growth rate		1989		1979-89 annual average			
$ millions	Rank	%	Rank	%	Rank	%	Rank	1989/$	1988	%	Rank	%	Rank	%	Rank		1989
272.4	357	1.1	396	1.6	394	5.1	373	0.63	6,200.0	(7.9)	297	(15.8)	354	15.5	197	17	251
754.7	266	2.2	355	3.1	347	6.1	367	1.60	(58.5)	(2.9)	275	14.7	220	16.2	182	5	252
N.A.		—		—		—		N.A.	—	—		40.4	115	—		5	253
N.A.		10.3	61	9.7	94	18.7	146	N.A.	—	—		N.A.		—		5	254
1,323.7	192	6.2	175	10.7	71	15.5	213	1.92	9.7	9.4	128	33.9	141	24.2	72	7	255
694.7	276	5.4	204	8.0	158	12.1	276	15.10	17.6	4.2	212	(2.4)	306	12.6	239	11	256
1,117.9	210	6.8	149	9.1	116	17.3	176	5.02**	10.3	0.3	252	27.3	171	11.2	261	4	257
929.5	241	3.6	298	3.5	328	5.2	372	1.88	(19.7)	(8.5)	298	(19.6)	371	4.5	314	11	258
N.A.		(15.2)	472	—		—		N.A.	—	—		N.A.		—		6	259
812.0	257	5.8	187	6.0	232	16.9	185	3.50	16.3	15.6	53	(6.1)	317	10.8	269	7	260
946.5	237	6.7	154	6.5	216	12.5	271	1.98	1.0	—		5.3	269	—		4	261
775.7	260	4.8	236	5.2	261	13.7	246	2.17	325.5	—		20.8	199	5.4	310	11	262
976.0	230	5.8	190	6.5	212	13.5	248	2.55	26.9	6.1	177	53.2	59	10.4	272	7	263
N.A.		27.0	2	41.1	1	96.7	7	N.A.	—	—		N.A.		—		25	264
2,068.1	135	8.4	96	10.2	78	15.8	206	2.24	(8.9)	10.5	117	39.7	117	29.0	35	23	265
746.2	268	3.0	328	4.3	302	6.9	358	0.80	(28.6)	0.6	248	(1.2)	300	11.0	266	17	266
728.5	273	3.8	287	8.6	137	19.7	129	1.72	(7.2)	3.8	216	55.3	52	19.4	126	1	267
947.4	236	10.0	68	6.3	223	15.3§	219	3.86	(11.7)	—		5.1	272	—		9	268
3,287.2	93	13.7	28	12.9	39	21.0	103	15.50	(25.9)	23.4	13	34.5	138	31.2	22	20	269
353.5	339	2.8	339	4.3	299	15.0	225	1.71	(74.1)	(21.5)	325	47.7	80	(13.8)	352	18	270
394.3	328	1.3	391	1.8	389	3.8	386	0.66	—	(11.1)	304	(9.8)	335	(3.2)	342	22	271
946.2	238	3.8	289	4.8	278	10.9	301	N.A.	—	—		56.3	49	—		9	272
762.1	262	4.8	230	6.8	202	14.0	240	4.02	48.9	(6.7)	292	19.1	204	2.9	323	11	273
414.9	324	1.8	373	2.8	355	5.7	369	0.38	(39.7)	(15.3)	316	(9.8)	336	—		5	274
N.A.		3.5	307	4.3	300	327.3§	3	N.A.	—	—		N.A.		—		7	275
2,072.3	134	11.7	37	19.4	12	26.9	51	1.87	48.4	—		40.3	116	—		2	276
1,101.6	212	6.5	162	7.4	186	11.5	288	1.56	25.8	34.0	3	20.9	198	51.0	1	26	277
N.A.		(0.2)	424	(0.2)	424	—		(0.88)**	—	—		N.A.		—		11	278
297.4	352	1.5	384	3.4	338	6.9	359	2.09	(55.5)	(15.5)	318	53.6	58	(1.3)	337	18	279
N.A.		0.5	410	0.7	407	2.5§	392	2.05	95.2	—		N.A.		—		24	280
1,072.2	215	0.0	421	0.0	421	0.1	406	0.01	(99.4)	—		73.9	24	—		6	281
N.A.		2.2	354	2.7	360	4.1	383	1.60	(46.5)	2.1	232	N.A.		—		4	282
N.A.		(3.0)	450	(2.8)	442	(112.2)	443	N.A.	—	—		N.A.		—		4	283
645.4	284	0.8	405	1.2	401	2.9	391	0.43	(63.2)	(13.1)	309	(4.2)	311	14.8	209	14	284
2,559.8	118	8.6	88	12.7	45	19.5	136	1.58	17.0	15.6	52	48.4	79	29.2	32	21	285
217.4	374	2.7	343	6.9	200	43.1§	21	5.04	21.4	—		36.9	129	—		15	286
459.3	317	2.3	351	3.4	335	7.4	356	1.53	20.5	10.3	120	(22.0)	375	5.0	312	7	287
209.5	375	1.2	395	1.7	392	4.9	377	0.77‡	—	—		N.A.		—		15	288
520.0	296	4.7	238	6.1	228	19.9	124	3.04	1.0	5.4	187	(10.7)	343	25.3	62	11	289
275.1	356	(9.0)	466	(11.5)	470	(22.9)	430	(4.10)	—	—		(32.4)	394	(7.6)	349	6	290
52.2	415	(0.9)	431	(1.5)	434	(5.7)	417	(0.91)**	(167.9)	—		(39.0)	400	0.4	331	4	291
816.9	256	5.5	201	3.8	321	22.1	90	1.17	6.4	—		133.3	5	—		2	292
2,593.0	117	11.6	40	18.0	13	24.2	73	1.79	6.5	15.6	54	41.9	110	26.6	53	20	293
323.5	345	1.3	390	1.9	386	4.8	378	0.89	(56.2)	(2.0)	269	(14.6)	352	19.4	127	2	294
933.2	239	15.7	17	10.9	68	25.3	60	5.00	42.5	19.6	25	31.9	149	17.3	161	9	295
1,051.3	218	3.5	308	4.1	311	7.8	348	1.38	32.7	5.1	194	74.0	23	22.7	87	20	296
1,262.6	196	4.6	245	5.6	246	9.9	315	2.71	(47.5)	2.6	227	27.2	173	17.4	157	15	297
1,626.1	167	7.1	140	5.7	242	13.9	244	1.14	22.6	—		42.3	106	—		20	298
834.9	251	10.7	54	15.7	21	39.1	27	3.09	237.7	21.9	16	87.7	13	21.4	104	8	299
N.A.		(8.4)	465	(5.0)	458	(45.8)	434	N.A.	—	—		N.A.		—		7	300

LARGEST U.S. INDUSTRIAL CORPORATIONS

RANK 1989	RANK 1988		SALES $ millions	SALES % change from 1988	PROFITS $ millions	PROFITS Rank	PROFITS % change from 1988	ASSETS $ millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ millions	STOCKHOLDERS' EQUITY Rank
301	317	**POTLATCH** San Francisco	1,240.8	14.5	136.7	173	21.7	1,686.0	216	829.5	180
302	337	**MATTEL** Hawthorne, Calif.	1,237.0	25.0	68.7‡	255	91.1	830.3	333	213.7	365
303	◑	**ORYX ENERGY** Dallas	1,237.0	(3.8)	139.0	169	–	4,185.0	105	1,485.0	113
304	•	**IMC FERTILIZER GROUP** Northbrook, Ill.[2]	1,232.7	13.6	137.3	172	22.9	1,677.9	219	765.3	193
305	339	**BAUSCH & LOMB** Rochester, N.Y.	1,230.8	25.8	114.4	198	16.8	1,429.2	240	713.3	202
306	312	**LUBRIZOL** Wickliffe, Ohio	1,227.9	9.9	94.0	216	(32.9)	960.2	309	663.3	211
307	318	**BALL** Muncie, Ind.	1,222.4	13.9	35.8	324	(29.1)	938.0	315	384.3	293
308	328	**GOLD KIST** Atlanta[2,27]	1,216.3	16.5	N.A.		–	567.6	395	241.4	354
309	•	**FIRST BRANDS** Danbury, Conn.[2]	1,207.1	29.0	61.0	269	–	829.8	334	121.6	419
310	314	**WHEELING-PITTSBURGH STEEL** Wheeling	1,203.0	9.1	179.3**	142	(30.6)	1,485.9	235	155.2	404
311	329	**RORER GROUP** Fort Washington, Pa.	1,198.3	15.0	86.5	227	39.8	1,791.7	209	475.5	258
312	307	**GERBER PRODUCTS** Fremont, Mich.[39]	1,190.3¶	2.1	81.4	236	284.2	697.2	364	330.4	309
313	434	**NACCO INDUSTRIES** Cleveland	1,187.6	92.6	53.9	284	20.0	1,680.2	217	300.8	326
314	306	**DWG** Miami Beach[17]	1,184.8	1.5	(.8)**	423	(102.2)	928.0	319	117.6	422
315	294	**ALLEGHENY LUDLUM** Pittsburgh	1,180.2	(2.3)	133.8	176	23.2	784.6	344	329.3	311
316	344	**SHAW INDUSTRIES** Dalton, Ga.[2]	1,176.0	22.7	47.6	293	40.9	538.0	407	184.7	389
317	370	**PENTAIR** St. Paul	1,163.6	41.3	36.4	318	(8.6)	781.4	347	306.9	322
318	310	**UNION TEXAS PETROLEUM HOLDINGS** Houston	1,159.7	2.0	172.6	148	57.9	1,720.6	213	275.3	336
319	•	**DOSKOCIL** South Hutchinson, Kans.[35,49]	1,148.3¶	350.3	N.A.		–	N.A.		N.A.	
320	359	**HILLENBRAND INDUSTRIES** Batesville, Ind.[26]	1,144.4	29.4	75.0	244	7.5	1,009.8	300	405.1	280
321	338	**NEWELL** Freeport, Ill.	1,122.9	13.6	85.4	230	39.0	871.3	326	455.8	263
322	330	**M.A. HANNA** Cleveland	1,113.7	9.3	86.9	225	4.4	1,035.7	289	542.6	241
323	324	**GEORGIA GULF** Atlanta	1,106.5	4.3	192.0	136	(0.8)	473.0	429	330.3	310
324	258	**PERKIN-ELMER** Norwalk, Conn.[18]	1,105.3¶	(22.6)	(24.2)	442	(133.7)	996.5	303	612.0	222
325	311	**ADVANCED MICRO DEVICES** Sunnyvale, Calif.	1,104.6	(1.9)	46.1	298	138.4	1,122.4	278	690.9	204
326	315	**RAYCHEM** Menlo Park, Calif.[2]	1,104.0	0.8	36.3	319	(71.0)	1,172.8	267	734.3	198
327	332	**FERRO** Cleveland	1,102.0	9.2	49.7	289	6.7	669.1	371	297.1	328
328	347	**SAVANNAH FOODS & INDUSTRIES** Savannah	1,096.7	19.6	41.1	311	104.8	481.8	423	169.5	396
329	335	**NALCO CHEMICAL** Naperville, Ill.	1,093.9	10.0	119.9	187	13.2	938.5	314	443.7	267
330	302	**FEDERAL-MOGUL** Southfield, Mich.	1,086.3	(7.7)	29.2	349	(30.0)	809.6	336	301.2	325
331	•	**ITT RAYONIER** Stamford, Conn.[50]	1,082.2	7.1	128.0	181	108.1	1,324.1	252	740.6	197
332	365	**IBC HOLDINGS** Kansas City, Mo.[8]	1,079.8	26.3	(23.5)	441	–	616.8	383	(22.7)	464
333	319	**BEMIS** Minneapolis	1,076.7	0.7	47.0	295	18.5	631.6	378	266.0	344
334	326	**VULCAN MATERIALS** Birmingham, Ala.	1,076.2	2.2	130.9	179	(3.8)	1,002.5	302	663.5	210
335	•	**ESSEX GROUP** Fort Wayne	1,056.0	–	26.7	361	–	451.1	437	101.9	433
336	219	**FORT HOWARD** Green Bay, Wis.	1,053.6	(43.3)	(239.4)	471	–	N.A.		N.A.	
337	353	**ROHR INDUSTRIES** Chula Vista, Calif.[18]	1,047.7	15.5	33.5	333	3.1	1,164.7	268	412.4	276
338	340	**ANCHOR GLASS CONTAINER** Tampa[35]	1,040.1	6.4	N.A.		–	N.A.		N.A.	
339	322	**A.O. SMITH** Milwaukee	1,024.2	(3.7)	(9.6)‡	428	(150.3)	795.7	340	271.1	338
340	•	**LEAR SIEGLER SEATING** Southfield, Mich.[2]	1,015.5	–	(8.2)	427	–	734.6	354	49.4	448
341	343	**AMSTED INDUSTRIES** Chicago[3]	1,014.3¶	5.6	65.0	263	475.2	573.5	393	177.3	393
342	362	**STORAGE TECHNOLOGY** Louisville, Colo.	1,014.0	16.0	47.7**	292	7.9	977.0	306	337.1	305
343	320	**BROWN-FORMAN** Louisville, Ky.[17]	1,012.0*	(5.1)	144.5	167	39.7	1,003.3	301	555.7	240
344	342	**GAF** Wayne, N.J.	1,010.9	5.2	(57.7)	452	(157.5)	1,829.2	205	(59.0)	467
345	357	**WM. WRIGLEY JR.** Chicago	1,010.7	13.4	106.1	201	21.7	498.6	418	343.0	302
346	354	**WORTHINGTON INDUSTRIES** Columbus, Ohio[8]	1,006.1	11.3	64.2	265	14.4	557.8	402	320.5	315
347	431	**TRINITY INDUSTRIES** Dallas[39]	1,001.9	58.3	30.3	343	132.3	878.1	325	227.7	359
348	321	**ARISTECH CHEMICAL** Pittsburgh	998.1	(6.3)	82.1	235	(56.4)	720.8	360	401.4	282
349	380	**WESTERN DIGITAL** Irvine, Calif.[2]	993.8	29.3	34.3	328	(21.0)	588.9	388	302.1	324
350	371	**LEGGETT & PLATT** Carthage, Mo.	991.6	22.4	45.9	299	21.7	568.3	394	281.6	334

The definitions, explanations, and footnotes underlying the figures in this directory are on page 367.

MARKET VALUE 3/9/90		PROFITS AS A PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from	1979-89 annual growth rate		1989		1979-89 annual average			
$ millions	Rank	%	Rank	%	Rank	%	Rank	1989/$	1988	%	Rank	%	Rank	%	Rank		1989
1,122.1	209	11.0	50	8.1	154	16.5	190	4.79	18.6	7.4	159	22.2	194	13.7	224	9	301
905.4	243	5.5	199	8.3	141	32.1	34	1.60‡	113.3	0.4	249	107.9	7	11.0	265	26	302
4,795.8	70	11.2	47	3.3	344	9.4	323	1.32	—	—		77.1	20	—		16	303
990.2	228	11.1	48	8.2	147	17.9	163	5.27	—	—		(21.3)	373	—		5	304
1,752.8	156	9.3	82	8.0	156	16.0	199	3.78	15.6	8.0	151	53.1	60	16.2	184	22	305
1,281.6	193	7.7	116	9.8	89	6.4§	365	2.52	(30.4)	0.8	247	9.3	248	7.5	294	5	306
653.3	282	2.9	334	3.8	322	9.3	325	1.44	(33.6)	1.9	236	25.2	184	23.7	76	14	307
N.A.		—		—		—		N.A.	—	—		N.A.		—		8	308
424.2	322	5.1	217	7.3	190	50.1	15	N.A.	—	—		N.A.		—		9	309
56.9	413	14.9	20	12.1	48	115.6	5	33.14**	(31.9)	10.5	116	27.1	174	(4.2)	345	15	310
2,227.1	128	7.2	131	4.8	273	18.2	160	2.67	36.2	9.1	132	12.1	235	19.2	129	19	311
1,559.9	172	6.8	151	11.7	54	24.6	67	4.13	286.0	10.7	115	65.6	35	30.2	27	8	312
463.8	315	4.5	246	3.2	345	17.9	165	6.08	19.7	16.9	43	78.4	18	18.1	151	11	313
255.2	360	(0.1)	423	(0.1)	423	(0.7)	407	(0.08)**	(107.2)	—		71.4	27	22.4	91	24	314
885.1	247	11.3	44	17.0	15	40.6	23	5.94	23.5	—		39.0	121	—		15	315
903.8	244	4.0	278	8.9	123	25.8	58	1.57	47.4	24.1	12	33.8	142	38.7	9	24	316
329.9	343	3.1	325	4.7	284	11.9	281	2.98	(19.5)	5.3	189	(9.7)	333	19.1	132	9	317
1,673.4	165	14.9	21	10.0	83	47.9§	20	1.49	104.1	—		77.2	19	—		16	318
8.3	418	—		—		—		N.A.	—	—		(10.2)	339	—		8	319
1,554.1	174	6.5	161	7.4	185	18.5	153	2.02	8.6	12.2	91	44.9	94	28.6	37	14	320
1,535.6	175	7.6	117	9.8	87	18.7	145	1.41	29.4	17.2	4.	60.1	43	40.1	6	14	321
691.2	277	7.8	114	8.4	140	16.0	200	3.34	(4.0)	(2.0)	270	42.8	103	4.2	315	5	322
977.5	229	17.4	11	40.6	2	58.1	12	7.58	12.3	—		18.2	206	—		5	323
1,027.0	221	(2.2)	438	(2.4)	440	(3.9)	415	(0.56)	(134.8)	—		(5.5)	314	2.9	322	22	324
730.1	271	4.2	269	4.1	309	6.7	362	0.44	300.0	10.3	119	(8.7)	330	2.7	325	7	325
957.9	234	3.3	318	3.1	346	4.9	376	1.04	(71.8)	(1.2)	264	(8.4)	328	6.7	299	21	326
446.6	319	4.5	247	7.4	184	15.6§	210	2.25	(0.7)	5.2	190	17.7	207	18.3	147	5	327
719.3	275	3.7	291	8.5	138	24.2	72	1.53	104.0	—		204.3	1	48.5	2	8	328
1,750.8	159	11.0	52	12.8	42	27.0	49	3.01	11.5	6.6	172	45.1	93	15.7	192	5	329
395.9	327	2.7	344	3.6	327	9.7	318	1.26	(24.3)	(2.7)	274	(8.3)	327	15.3	200	17	330
N.A.		11.8	35	9.7	96	17.3	178	N.A.	—	—		N.A.		—		9	331
N.A.		(2.2)	437	(3.8)	452	—		(3.45)	—	—		N.A.		—		8	332
755.3	265	4.4	257	7.4	182	17.7	171	1.80	21.6	9.4	129	50.8	71	30.5	26	9	333
1,741.6	160	12.2	32	13.1	37	19.7	128	3.24	(1.8)	9.0	136	10.7	242	23.0	84	16	334
N.A.		2.5	349	5.9	236	26.2	54	N.A.	—	—		N.A.		—		15	335
N.A.		(22.7)	473	—		—		N.A.	—	—		N.A.		—		9	336
373.4	332	3.2	324	2.9	349	8.1	341	1.90	2.7	(2.5)	272	(26.9)	388	11.1	262	1	337
N.A.		—		—		—		N.A.	—	—		N.A.		—		4	338
125.6	401	(0.9)	430	(1.2)	431	(3.5)	412	(1.66)‡	(189.2)	—		(13.1)	347	4.9	313	17	339
N.A.		(0.8)	429	(1.1)	430	(16.6)	427	N.A.	—	—		N.A.		—		10	340
N.A.		6.4	169	11.3	60	36.7	29	6.50	1,060.7	1.0	246	N.A.		—		15	341
511.5	300	4.7	239	4.9	270	14.2	236	1.83**	(3.7)	(19.4)	323	(32.9)	395	(23.6)	355	6	342
2,066.8	136	14.3	25	14.4	24	26.0	57	5.15	58.5	17.2	40	57.2	47	24.2	71	3	343
N.A.		(5.7)	460	(3.2)	443	—		N.A.	—	—		N.A.		—		5	344
1,959.8	144	10.5	58	21.3	8	30.9	39	2.70	23.9	13.3	78	52.7	62	21.0	110	8	345
819.9	255	6.4	171	11.5	57	20.0	119	1.58	15.3	12.4	88	3.3	279	17.0	167	15	346
471.4	313	3.0	329	3.5	332	13.3	253	1.60	116.2	(4.1)	278	(10.4)	340	12.4	246	27	347
N.A.		8.2	105	11.4	59	20.5	113	2.36	(53.2)	—		13.2	227	—		5	348
321.1	347	3.5	309	5.8	238	11.4	289	1.18	(22.9)	—		(43.2)	404	10.8	268	7	349
519.2	298	4.6	243	8.1	155	16.3	194	2.65	19.9	16.7	47	29.6	159	26.5	55	10	350

THE FORTUNE 500 LARGEST U.S. INDUSTRIAL CORPORATIONS

RANK 1989	1988		SALES $ millions	SALES % change from 1988	PROFITS $ millions	PROFITS Rank	PROFITS % change from 1988	ASSETS $ millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ millions	STOCKHOLDERS' EQUITY Rank
351	376	**SCI SYSTEMS** Huntsville, Ala.[2]	990.5	27.9	20.9	376	10.1	624.3	379	169.7	395
352	254	**INT'L MINERALS & CHEMICAL** Northbrook, Ill.[2]	982.9	(33.2)	117.0	194	3.1	1,971.6	195	888.2	171
353	355	**CONSOLIDATED PAPERS** Wisconsin Rapids, Wis.	977.8	9.0	167.9	154	12.0	1,086.3	283	831.7	178
354	389	**MARION LABORATORIES** Kansas City, Mo.[2]	969.2	28.9	227.4	117	51.6	784.0	345	569.4	234
355	352	**MAGNETEK** Los Angeles[2]	961.6	5.7	18.3‡	386	(6.4)	646.6	375	98.8	436
356	336	**FUQUA INDUSTRIES** Atlanta	952.3	(4.1)	6.4	411	(93.1)	1,148.0	270	391.2	288
357	390	**STANDARD COMMERCIAL** Wilson, N.C.[39]	951.4¶	26.9	1.6**	419	(90.6)	558.9	401	139.1	411
358	341	**ALLEGHENY INTERNATIONAL** Pittsburgh[5]	949.7	(1.9)	(54.9)	450	–	858.9	328	(336.0)	482
359	351	**AG PROCESSING** Omaha[27,33]	949.3	4.3	N.A.		–	219.5	484	117.7	421
360	405	**PHILIPS INDUSTRIES** Dayton[39]	945.1	36.5	46.3	297	7.1	476.4	428	248.7	351
361	378	**VALERO ENERGY** San Antonio	941.3	22.1	41.5	308	35.7	1,017.6	297	512.5	248
362	356	**INTERLAKE** Oak Brook, Ill.	912.9	2.3	1.0	421	(97.6)	594.5	385	(203.0)	480
363	366	**SNAP-ON TOOLS** Kenosha, Wis.	890.8	4.2	104.7	203	(7.6)	777.6	348	572.7	232
364	350	**BRIGGS & STRATTON** Wauwatosa, Wis.[2]	877.1	(4.0)	(20.0)	435	(166.3)	560.8	400	259.2	346
365	372	**INTERGRAPH** Huntsville, Ala.	873.6	9.2	79.5	238	(9.6)	808.0	338	629.8	220
366	382	**OCEAN SPRAY** Lakeville-Middleboro, Mass.[27,33]	873.1	13.9	N.A.		–	520.7	413	193.8	381
367	391	**COOPER TIRE & RUBBER** Findlay, Ohio	869.6	16.3	58.2	273	41.8	519.9	414	310.1	320
368	367	**INT'L FLAVORS & FRAGRANCES** New York	869.5	3.6	138.6	171	7.7	969.6	308	764.9	194
369	•	**TEREX** Green Bay, Wis.	862.8	151.0	18.8	383	42.2	678.3	369	82.9	442
370	364	**CINCINNATI MILACRON** Cincinnati	861.2	0.4	17.4**	389	(53.2)	696.2	366	226.6	360
371	369	**DEXTER** Windsor Locks, Conn.	858.9	3.8	43.0	307	21.1	694.5	365	325.3	314
372	•	**CRYSTAL BRANDS** Southport, Conn.	857.2	98.2	18.5	384	(5.7)	682.5	367	237.7	355
373	345	**CF INDUSTRIES** Long Grove, Ill.[27]	855.9	(10.6)	N.A.		–	797.9	339	490.7	255
374	280	**AM INTERNATIONAL** Chicago[18]	855.1	(34.1)	31.0	339	–	615.2	384	243.2	353
375	377	**PITTWAY** Northbrook, Ill.	854.0	10.7	32.7	336	(12.2)	678.4	368	366.0	296
376	407	**IMO INDUSTRIES** Lawrenceville, N.J.	851.4	23.9	33.9	330	20.0	1,020.6	296	332.5	308
377	•	**J&L SPECIALTY PRODUCTS** Pittsburgh[5]	848.7	9.7	79.1	240	(27.6)	576.5	390	(97.5)	473
378	•	**DRESSER-RAND** Corning, N.Y.[5]	846.0	–	N.A.		–	521.4	412	276.2	335
379	435	**GREAT LAKES CHEMICAL** West Lafayette, Ind.	847.7	37.6	122.9	186	19.0	1,097.4	280	590.9	228
380	396	**UNIVERSAL FOODS** Milwaukee[5]	837.3	16.4	40.0	314	44.6	488.6	420	203.4	371
381	384	**HARLEY-DAVIDSON** Milwaukee	831.3	9.8	32.9	335	37.8	378.9	448	156.2	403
382	•	**JPS TEXTILE GROUP** Greenville, S.C.[6]	821.3	–	(57.2)	451	–	620.8	382	(59.8)	468
383	363	**QUAKER STATE** Oil City, Pa.	819.3	(5.7)	11.8	400	(20.7)	765.6	349	307.1	321
384	399	**CHESAPEAKE** Richmond	815.0	14.6	47.6	294	(7.6)	789.7	341	314.1	319
385	381	**KAMAN** Bloomfield, Conn.	801.8	4.5	9.7	407	(65.5)	441.1	441	182.5	390
386	398	**HERMAN MILLER** Zeeland, Mich.[8]	799.4	12.0	44.7	300	0.2	494.6	419	269.9	340
387	411	**MEREDITH** Des Moines[2]	792.6	16.8	33.2	334	(30.0)	667.4	372	366.8	295
388	415	**VALMONT INDUSTRIES** Valley, Neb.	789.8	19.2	20.7	379	35.0	321.9	472	99.4	435
389	392	**FLOWERS INDUSTRIES** Thomasville, Ga.[2]	789.3	7.0	29.6	347	(31.6)	448.0	438	208.5	368
390	409	**LESLIE FAY** New York	786.3	15.2	25.8	364	15.8	387.3	446	159.7	400
391	385	**CRAY RESEARCH** Minneapolis	784.7	3.8	89.0	222	(43.1)	955.8	310	594.3	226
392	375	**VISTA CHEMICAL** Houston[5]	779.2	(0.3)	119.9	188	6.0	566.8	396	(156.4)	476
393	383	**C.R. BARD** Murray Hill, N.J.	777.8	2.7	65.4	262	(16.9)	562.6	399	333.6	307
394	394	**DENNISON MANUFACTURING** Framingham, Mass.	777.0	7.7	29.1	350	(21.8)	553.7	404	268.0	342
395	348	**SMITHFIELD FOODS** Smithfield, Va.[33]	774.8	(15.4)	10.8	404	(35.4)	151.6	488	43.5	452
396	•	**TESORO PETROLEUM** San Antonio[5]	773.3	(31.2)	(30.5)	445	(257.7)	452.0	436	125.4	418
397	360	**SPX** Muskegon, Mich.	773.0¶	(11.9)	81.3	237	81.1	574.6	392	205.0	370
398	387	**INSILCO** Midland, Texas	766.0	1.7	(43.4)	448	–	1,105.4	279	44.5	451
399	325	**AMSTAR** New Haven, Conn.[2]	765.9¶	(27.6)	38.1	317	–	511.8	415	103.4	432
400	410	**HARVARD INDUSTRIES** Farmingdale, N.J.[5]	757.6	11.4	(20.4)‡	436	(245.1)	532.9	409	31.9	457

The definitions, explanations, and footnotes underlying the figures in this directory are on page 367.

MARKET VALUE 3/9/90 $ millions	Rank	PROFITS AS A PERCENT OF SALES %	Rank	ASSETS %	Rank	STOCKHOLDERS' EQUITY %	Rank	EARNINGS PER SHARE 1989 $	% change from 1988	1979-89 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1989 %	Rank	1979-89 annual average %	Rank	INDUSTRY TABLE NUMBER	RANK 1989
240.5	366	2.1	360	3.3	340	12.3	272	1.00	9.9	26.3	6	(42.5)	403	18.7	142	6	351
1,210.5	202	11.9	34	5.9	234	13.2	256	4.49	22.7	0.0	256	39.3	119	8.6	286	5	352
1,842.4	150	17.2	12	15.5	22	20.2	118	3.85	11.9	11.6	100	31.4	154	25.7	59	9	353
N.A.		23.5	3	29.0	6	39.9	24	1.46	52.1	41.4	1	35.9	133	43.6	4	19	354
231.1	368	1.9	366	2.8	352	18.5	152	0.83‡	(11.0)	–		N.A.		–		7	355
484.2	305	0.7	407	0.6	410	1.6	395	0.30	(93.0)	(13.5)	311	(16.1)	357	21.5	103	11	356
83.2	407	0.2	418	0.3	418	1.2	399	0.20**	(90.4)	(13.8)	313	(22.0)	374	17.3	158	25	357
4.4	419	(5.8)	461	(6.4)	464	–		(7.80)	–	–		(82.7)	415	(35.0)	357	7	358
N.A.		–		–		–		N.A.	–	–		–		–		8	359
413.7	325	4.9	228	9.7	92	18.6	148	1.61	5.9	19.9	24	24.7	186	36.7	10	14	360
530.4	294	4.4	254	4.1	310	7.8§	350	0.98	81.5	–		72.0	26	–		18	361
78.7	408	0.1	420	0.2	419	–		0.09	(97.6)	(30.3)	331	22.6	191	23.2	82	11	362
1,364.5	188	11.8	36	13.5	34	10.8§	302	2.55	(6.3)	9.0	137	(4.4)	312	12.5	243	14	363
419.4	323	(2.3)	439	(3.6)	450	(7.7)	418	(1.39)	(166.5)	–		(1.9)	303	5.8	308	11	364
1,144.8	207	9.1	84	9.8	85	12.6	269	1.48	(4.5)	–		(17.9)	364	–		6	365
N.A.		–		–		–		N.A.	–	–		N.A.		–		8	366
742.9	269	6.7	153	11.2	63	16.8	144	2.84	41.3	24.2	11	36.4	130	39.5	7	21	367
2,246.0	127	15.9	15	14.3	26	18.1	162	3.65	7.4	8.1	149	42.0	107	17.5	155	23	368
224.9	372	2.2	356	2.8	354	22.7	85	2.37	32.4	–		73.1	25	–		17	369
429.5	321	2.0	364	2.5	365	7.7	353	0.70**	(53.9)	(11.8)	305	(17.5)	363	2.0	326	11	370
534.1	293	5.0	218	6.2	226	13.2	254	1.73	21.0	4.9	200	1.5	288	12.9	236	5	371
244.4	363	2.2	357	2.7	359	7.8	349	2.05	25.8	–		29.0	160	–		2	372
N.A.		–		–		–		N.A.	–	–		N.A.		–		5	373
160.8	391	3.6	297	5.0	266	12.8	265	0.47	–	(10.2)	302	(17.5)	362	(12.9)	351	6	374
503.4	302	3.8	288	4.8	274	8.9	332	2.38	–	–		N.A.		–		7	375
326.7	344	4.0	281	3.3	342	10.2	309	1.88	5.6	–		(18.5)	367	–		11	376
N.A.		9.3	81	13.7	30	–		N.A.	–	–		N.A.		–		15	377
N.A.		–		–		–		N.A.	–	–		N.A.		–		11	378
1,705.2	163	14.5	24	11.2	64	20.8	105	3.52	18.7	18.2	34	64.0	40	18.9	137	5	379
674.3	278	4.8	235	8.2	149	19.6	133	1.60	43.7	13.4	76	5.6	268	24.4	68	8	380
335.3	342	4.0	282	8.7	132	21.1	101	3.81	27.0	–		54.7	55	–		27	381
N.A.		(7.0)	463	(9.2)	468	–		N.A.	–	–		N.A.		–		24	382
349.2	340	1.4	386	1.5	395	3.9	385	0.44	(22.8)	(11.9)	306	(10.5)	341	3.6	318	18	383
390.7	330	5.8	188	6.0	231	15.2	222	2.31	(8.0)	8.4	146	2.6	284	13.2	231	9	384
147.8	395	1.1	397	2.0	382	4.8	380	0.48	(66.2)	0.3	251	(26.3)	386	16.0	189	1	385
480.4	306	5.6	196	9.0	117	16.6	189	1.84	1.1	14.9	61	1.8	286	22.5	90	10	386
581.0	289	4.2	268	5.0	268	9.0	331	1.75	(29.4)	7.1	168	17.0	210	22.1	98	20	387
205.7	377	2.6	347	6.4	219	20.8	106	1.78	29.5	15.9	50	69.0	30	29.1	33	7	388
655.8	281	3.7	293	6.6	210	14.2	235	0.85	(30.9)	9.8	122	1.7	287	28.5	38	8	389
221.9	373	3.3	319	6.7	207	16.1	195	1.35	15.4	–		8.1	255	–		2	390
1,396.3	185	11.3	43	9.3	110	15.0	226	3.02	(39.5)	25.4	8	(31.0)	393	18.0	152	6	391
373.0	334	15.4	18	21.2	9	–		8.56	32.1	–		(18.8)	368	–		5	392
729.2	272	8.4	97	11.6	55	19.6	134	1.18	(14.5)	17.6	36	(2.3)	305	28.2	41	22	393
373.0	335	3.7	292	5.3	256	10.9	299	1.82	(22.6)	0.0	255	(0.9)	298	12.6	241	9	394
72.6	412	1.4	388	7.1	195	24.7	66	1.32	(29.0)	13.6	74	(22.8)	380	19.9	120	8	395
126.6	400	(3.9)	455	(6.8)	465	(29.4)	432	(2.83)	–	–		(22.1)	376	(5.3)	347	18	396
337.4	341	10.5	57	14.2	27	(54.0)	436	5.70	56.6	10.1	121	12.0	236	16.5	178	17	397
N.A.		(5.7)	459	(3.9)	454	(97.5)	442	(0.74)	–	–		N.A.		–		17	398
N.A.		5.0	221	7.4	183	36.8	28	N.A.	–	–		N.A.		–		8	399
N.A.		(2.7)	446	(3.8)	453	(64.0)	440	N.A.	–	–		N.A.		–		17	400

351-400

THE FORTUNE 500 LARGEST U.S. INDUSTRIAL CORPORATIONS

401-450

RANK 1989	RANK 1988		SALES $ millions	SALES % change from 1988	PROFITS $ millions	PROFITS Rank	PROFITS % change from 1988	ASSETS $ millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ millions	STOCKHOLDERS' EQUITY Rank
401	388	**DANAHER** Washington, D.C.	756.4	0.5	61.1	268	38.9	507.1	416	191.7	383
402	404	**KELLWOOD** St. Louis[17]	753.7	8.0	33.5	332	10.9	447.2	439	191.0	384
403	408	**H.B. FULLER** St. Paul[26]	753.4	10.0	15.7	393	(25.7)	455.2	434	186.5	386
404	395	**LOUISIANA LAND & EXPLORATION** New Orleans	751.7	4.3	44.1	304	–	1,199.4	263	416.2	274
405	424	**MEDTRONIC** Minneapolis[17]	746.6	14.3	97.4	213	12.6	759.6	351	473.6	259
406	•	**TRI VALLEY GROWERS** San Francisco[3,27]	746.6	11.9	N.A.		–	505.2	417	135.3	412
407	412	**GAYLORD CONTAINER** Deerfield, Ill.[3]	746.0	11.1	39.4	315	(6.0)	1,010.0	299	180.3	392
408	401	**INTERNATIONAL CONTROLS** Kalamazoo, Mich.	743.5	5.6	2.9**	413	–	534.1	408	(111.8)	475
409	•	**MARK IV INDUSTRIES** Williamsville, N.Y.[24,27]	742.3	84.2	22.8	369	33.8	1,094.0	281	114.8	426
410	379	**EAGLE-PICHER INDUSTRIES** Cincinnati[17]	733.6	(4.7)	53.8	285	–	479.0	425	(213.5)	481
411	•	**EXIDE** Reading, Pa.[39]	725.3	11.2	(16.6)‡	432	(182.8)	476.8	427	(11.1)	461
412	443	**ALBERTO-CULVER** Melrose Park, Ill.[5]	717.4	18.6	29.4	348	9.5	362.6	453	160.1	399
413	428	**TEXAS INDUSTRIES** Dallas[8]	716.9	12.8	3.8	412	(71.0)	730.8	355	253.8	350
414	•	**CONE MILLS** Greensboro, N.C.	715.2	4.0	12.1‡	399	114.8	479.5	424	132.6	413
415	416	**NERCO** Portland, Ore.[32]	712.8	7.7	68.1	256	2.4	1,300.7	255	536.6	243
416	•	**ANACOMP** Indianapolis[5]	710.2	55.5	(170.8)	464	(512.4)	786.8	343	(78.8)	471
417	•	**CONNER PERIPHERALS** San Jose, Calif.	709.3	176.4	41.4	310	109.7	468.1	430	200.8	376
418	413	**STANDARD REGISTER** Dayton	708.9	5.9	40.4	313	5.9	459.2	432	319.1	316
419	454	**AVONDALE INDUSTRIES** Avondale, La.	708.3	19.6	1.8	417	(59.5)	476.8	426	263.0	345
420	417	**OHIO MATTRESS HOLDING** Cleveland[15,33]	705.8	6.7	(24.7)	443	(174.3)	1,130.7	275	45.2	449
421	421	**LONGVIEW FIBRE** Longview, Wash.[6]	701.3	6.7	66.5	261	(30.9)	738.9	352	385.4	292
422	429	**FINEVEST FOODS** Greenwich, Conn.	700.8	10.4	(19.0)	433	(657.9)	250.0	482	40.3	454
423	•	**LINCOLN ELECTRIC** Cleveland[35]	697.4	–	N.A.		–	N.A.		N.A.	
424	450	**JOSTENS** Minneapolis[2]	696.4	16.9	54.4	282	(38.8)	452.8	435	222.3	361
425	437	**COMMERCE CLEARING HOUSE** Riverwoods, Ill.	692.2	13.0	34.3	327	(30.6)	590.7	387	215.2	364
426	422	**CALMAT** Los Angeles	689.8	5.3	78.1	243	38.5	809.4	337	526.8	244
427	470	**DIBRELL BROTHERS** Danville, Va.[3]	689.5	24.2	14.6	395	14.7	302.9	475	75.1	443
428	480	**RUSSELL** Alexander City, Ala.	688.0	29.5	64.2	266	19.3	720.8	359	402.2	281
429	430	**RICELAND FOODS** Stuttgart, Ark.[13,27]	684.3	8.1	N.A.		–	262.8	480	149.6	407
430	436	**HUBBELL** Orange, Conn.	683.9	11.3	79.4	239	11.3	576.3	391	427.8	271
431	425	**LPL TECHNOLOGIES** Wallingford, Conn.[34]	679.9	4.5	27.9	355	200.6	726.5	357	45.1	450
432	406	**LONE STAR TECHNOLOGIES** Dallas	675.0¶	(1.9)	(191.4)‡	469	–	3,601.0	122	107.0	431
433	440	**UST** Greenwich, Conn.	669.8	10.4	190.5	139	17.5	636.3	377	482.3	257
434	•	**IMPERIAL HOLLY** Sugar Land, Texas[39]	667.8	–	22.4	371	–	320.1	473	100.2	434
435	•	**AFG INDUSTRIES** Fort Worth[35]	665.8	–	N.A.		–	N.A.		N.A.	
436	•	**ST. JOE PAPER** Jacksonville, Fla.	663.3	1.8	67.2	260	(18.7)	1,281.2	256	767.3	192
437	448	**NAT'L COOP. REFINERY ASSN.** McPherson, Kans.[2,27]	663.2	10.6	N.A.		–	351.4	456	201.9	374
438	496	**PILGRIM'S PRIDE** Pittsburg, Texas[5]	662.9	30.9	20.3	380	1,092.4	291.1	476	87.1	440
439	433	**MILLIPORE** Bedford, Mass.	661.4	6.4	52.9	287	(3.1)	650.6	374	406.9	279
440	439	**MAGMA COPPER** San Manuel, Ariz.	653.1	7.6	58.5**	272	3.8	954.1	311	449.3	264
441	438	**TORO** Bloomington, Minn.[18]	650.8	6.8	22.1	372	10.2	326.0	469	97.5	437
442	418	**HANDY & HARMAN** New York	645.6	(1.9)	7.8	409	(19.9)	455.7	433	116.4	424
443	442	**LUKENS** Coatesville, Pa.	645.0	6.6	41.5	309	24.3	376.7	449	202.9	373
444	463	**PHILLIPS-VAN HEUSEN** New York[23]	642.2	13.2	20.7	378	(31.1)	323.1	471	32.5	456
445	•	**TREDEGAR INDUSTRIES** Richmond	637.9	–	17.3	390	–	367.8	451	185.1	387
446	420	**WARNACO GROUP** New York	636.2¶	(3.2)	(20.8)	437	–	592.9	386	(71.5)	470
447	414	**SSMC** Shelton, Conn.[35]	635.2	(5.0)	N.A.		–	N.A.		N.A.	
448	469	**CARPENTER TECHNOLOGY** Reading, Pa.[7]	634.3	14.2	29.0	351	19.0	674.0	370	318.6	317
449	•	**HELENE CURTIS INDUSTRIES** Chicago[24]	629.2	28.7	14.4	396	33.3	325.2	470	131.8	414
450	478	**SUDBURY** Cleveland[8]	626.9¶	17.9	(15.6)	431	(238.1)	350.9	457	62.5	447

The definitions, explanations, and footnotes underlying the figures in this directory are on page 367.

MARKET VALUE 3/9/90		PROFITS AS A PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1988	1979-89 annual growth rate		1989		1979-89 annual average			
$ millions	Rank	%	Rank	%	Rank	%	Rank	1989/$		%	Rank	%	Rank	%	Rank		1989
353.7	338	8.1	108	12.1	49	31.9	35	2.57	38.9	–		8.0	256	20.8	113	14	401
202.9	379	4.4	251	7.5	180	17.5	174	2.90	11.1	21.1	18	(14.0)	350	26.1	57	2	402
204.7	378	2.1	361	3.4	333	8.4	336	1.64	(25.5)	7.1	169	(15.8)	355	16.7	174	5	403
1,161.3	206	5.9	184	3.7	323	10.6	303	1.50	–	(10.3)	303	41.9	109	5.5	309	16	404
1,724.7	162	13.0	29	12.8	41	20.6	112	7.30	15.5	16.8	44	71.3	28	16.1	187	22	405
N.A.		–		–		–		N.A.	–	–		N.A.		–		8	406
112.7	403	5.3	208	3.9	318	21.9	92	2.48	(10.0)	–		(45.3)	408	–		9	407
N.A.		0.4	411	0.6	411	–		N.A.	–	–		N.A.		–		17	408
172.4	387	3.1	326	2.1	380	19.9	125	2.10	22.8	28.6	4	90.9	11	–		7	409
76.2	411	7.3	129	11.2	61	–		5.04	–	5.1	195	(40.8)	402	(3.6)	343	17	410
N.A.		(2.3)	440	(3.5)	448	–		(179.20)‡	(214.0)	–		N.A.		–		7	411
613.9	288	4.1	274	8.1	153	18.4	156	2.25	13.1	17.1	42	22.5	192	35.3	13	23	412
225.0	371	0.5	409	0.5	412	1.5	396	0.14	(86.6)	(26.4)	327	(27.2)	389	6.5	302	15	413
N.A.		1.7	379	2.5	367	9.1	328	N.A.	–	–		N.A.		–		24	414
963.8	232	9.6	75	5.2	259	12.7	266	1.90	(4.5)	–		66.2	34	–		16	415
127.2	399	(24.1)	475	(21.7)	473	–		(4.47)	(506.4)	–		(37.0)	399	(8.8)	350	22	416
739.9	270	5.8	186	8.9	122	20.6	109	1.09	87.9	–		66.7	32	–		6	417
473.9	312	5.7	194	8.8	127	12.6	268	1.35	5.5	22.7	15	1.4	289	26.2	56	20	418
160.0	392	0.3	415	0.4	415	0.7	403	0.12	(45.5)	–		(9.8)	337	–		27	419
N.A.		(3.5)	454	(2.2)	438	(54.7)	438	N.A.	–	–		N.A.		–		10	420
661.3	280	9.5	77	9.0	118	17.3	180	6.04	(30.7)	6.0	179	(6.9)	318	12.0	250	9	421
84.8	406	(2.7)	447	(7.6)	467	(47.1)	435	(1.79)	(597.2)	–		5.9	266	–		8	422
N.A.		–		–		–		N.A.	–	–		N.A.		–		11	423
1,008.3	225	7.8	113	12.0	50	24.5	68	1.39	(44.0)	10.7	113	55.0	53	24.3	69	12	424
853.3	250	5.0	222	5.8	239	16.0	203	1.92	(30.2)	5.9	183	(7.1)	319	15.7	191	20	425
864.9	248	11.3	45	9.6	98	14.8	228	2.52	38.5	4.5	208	9.2	250	11.4	258	4	426
155.4	394	2.1	359	4.8	275	19.4	137	2.21	16.9	16.8	45	31.9	151	33.6	15	25	427
1,036.7	219	9.3	80	8.9	121	16.0	202	1.57	15.4	13.9	68	64.1	38	33.7	14	2	428
N.A.		–		–		–		N.A.	–	–		N.A.		–		8	429
1,180.7	204	11.6	38	13.8	29	18.6	151	2.78	11.8	11.0	108	45.8	86	24.2	70	7	430
125.5	402	4.1	273	3.8	320	61.9	11	3.68	312.0	–		140.0	4	–		7	431
93.5	405	(28.4)	476	(5.3)	459	(178.9)	445	(9.50)‡	–	–		(73.6)	414	–		15	432
2,812.2	109	28.4	1	29.9	4	39.5	26	1.63	15.6	18.4	30	54.7	54	33.3	17	25	433
247.7	362	3.4	316	7.0	196	22.3	89	3.75	–	–		140.2	3	–		8	434
N.A.		–		–		–		N.A.	–	–		N.A.		–		4	435
N.A.		10.1	64	5.2	257	8.8	333	N.A.	–	–		N.A.		–		9	436
N.A.		–		–		–		N.A.	–	–		N.A.		–		18	437
186.4	385	3.1	327	7.0	197	23.3	80	0.90	1,025.0	–		15.5	212	–		8	438
787.8	259	8.0	109	8.1	151	13.0	260	1.90	(3.1)	8.3	147	(22.4)	378	7.4	295	22	439
137.5	398	9.0	85	6.1	227	13.0	258	1.82**	21.3	–		(26.8)	387	–		15	440
277.2	354	3.4	313	6.8	205	22.7	84	2.10	14.1	0.1	253	35.0	136	6.7	300	11	441
242.5	365	1.2	394	1.7	391	6.7	361	0.56	(20.0)	(5.8)	287	(3.1)	308	1.6	328	15	442
315.7	349	6.4	167	11.0	66	20.5	114	4.73	21.0	17.3	39	47.0	82	20.7	114	15	443
156.9	393	3.2	323	6.4	222	63.6	10	1.34	(32.0)	9.4	131	16.0	211	22.0	100	2	444
166.6	388	2.7	341	4.7	281	9.3	324	0.94	–	–		N.A.		–		21	445
N.A.		(3.3)	452	(3.5)	449	–		(12.70)	–	–		N.A.		–		2	446
227.6	369	–		–		–		N.A.	–	–		51.1	68	–		7	447
446.9	318	4.6	244	4.3	301	9.1	329	3.16	18.4	(4.0)	276	7.2	263	10.2	274	15	448
205.8	376	2.3	352	4.4	297	11.0	297	3.43	16.7	21.6	17	28.5	162	30.8	25	23	449
54.5	414	(2.5)	441	(4.5)	455	(25.0)	431	(1.28)	(248.8)	–		(24.4)	382	–		17	450

RANK 1989	RANK 1988		SALES $ millions	SALES % change from 1988	PROFITS $ millions	PROFITS Rank	PROFITS % change from 1988	ASSETS $ millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ millions	STOCKHOLDERS' EQUITY Rank
451	449	**A. SCHULMAN** Akron[33]	626.2	4.8	30.8	340	11.5	257.7	481	166.6	397
452	•	**GITANO GROUP** New York	625.9	34.7	30.7	341	–	440.9	442	126.5	417
453	•	**HUDSON FOODS** Rogers, Ark.[5]	623.1	13.5	22.8	370	53.9	289.4	477	110.6	428
454	447	**BELL & HOWELL** Skokie, Ill.	622.6[4]	3.8	25.4**	365	–	702.0	363	86.0	441
455	457	**GUILFORD MILLS** Greensboro, N.C.[2]	622.1	7.6	26.3	362	(1.6)	409.9	445	207.7	369
456	498	**CAMERON IRON WORKS** Houston[2,55]	619.8	23.6	20.1	381	–	737.3	353	351.6	299
457	488	**POPE & TALBOT** Portland, Ore.	618.8	20.2	43.6	306	36.6	355.5	455	199.3	377
458	461	**P.H. GLATFELTER** Spring Grove, Pa.	613.5	7.8	92.9	217	12.9	550.0	405	382.1	294
459	452	**THORN APPLE VALLEY** Southfield, Mich.[6]	612.8	3.3	2.3	414	(57.0)	110.7	489	28.0	458
460	397	**REXENE** Dallas	612.5	(14.8)	(66.3)‡	454	(151.2)	555.7	403	(81.4)	472
461	•	**MARLEY** Mission Woods, Kans.[6]	611.4	7.9	(11.4)‡	429	(289.8)	334.3	465	(30.4)	465
462	459	**HON INDUSTRIES** Muscatine, Iowa	608.4	5.8	27.5	358	(22.2)	284.3	479	128.2	415
463	460	**MAXUS ENERGY** Dallas	608.1	5.8	(31.0)	446	–	1,477.8	237	(36.7)	466
464	386	**MEDIA GENERAL** Richmond	606.4	(19.8)	20.7‡	377	134.9	782.7	346	258.6	347
465	451	**WESTMORELAND COAL** Philadelphia	604.6	1.9	11.5	402	661.9	345.4	460	150.7	406
466	446	**REYNOLDS & REYNOLDS** Dayton[5]	604.5	0.7	27.2	359	4.4	486.8	422	221.5	362
467	•	**NEWMONT MINING** Denver	602.8	20.5	125.9	182	(28.0)	1,301.7	254	(199.6)	479
468	334	**TYLER** Dallas	601.6[4]	(39.6)	1.4	420	(93.1)	188.1	486	117.3	423
469	476	**FOXBORO** Foxboro, Mass.	597.8	10.7	(4.6)	425	(146.5)	443.8	440	182.1	391
470	481	**KIMBALL INTERNATIONAL** Jasper, Ind.[2]	597.5	12.8	34.3	329	(3.7)	337.7	462	247.0	352
471	500	**CHEMED** Cincinnati	594.4	18.7	26.2	363	8.5	335.3	463	120.8	420
472	•	**THERMO ELECTRON** Waltham, Mass.	594.1	18.7	24.6	367	22.1	823.6	381	210.6	366
473	445	**SOUTHDOWN** Houston	592.5	(1.3)	68.0	257	20.0	1,060.1	286	342.6	303
474	482	**BANTA** Menasha, Wis.[56]	588.9	11.8	33.6	331	45.4	382.9	447	194.7	379
475	402	**AMETEK** New York	587.8	(16.2)	38.3	316	25.2	563.3	398	194.9	378
476	465	**TAMBRANDS** Lake Success, N.Y.	583.4	3.6	1.7	418	(98.0)	411.0	444	284.5	332
477	426	**BUTLER MANUFACTURING** Kansas City, Mo.	582.0	(9.9)	9.8	406	(36.0)	241.2	483	42.1	453
478	•	**INTERFACE** LaGrange, Ga.	581.8	46.7	24.5	368	21.6	525.8	410	157.0	401
479	403	**STERLING CHEMICALS** Houston[5]	581.0	(16.9)	103.9	204	(51.2)	329.0	468	110.4	429
480	473	**BANNER INDUSTRIES** Beachwood, Ohio[2,57]	579.2[4]	5.8	50.0‡	288	–	1,421.8	241	95.4	438
481	490	**PRAIRIE FARMS DAIRY** Carlinville, Ill.[5,27]	578.1	12.9	N.A.		–	156.5	437	91.8	439
482	466	**MITCHELL ENERGY** The Woodlands, Texas[23]	577.2	2.7	21.5	373	146.0	1,996.3	193	567.2	235
483	•	**STANHOME** Westfield, Mass.	576.9	20.1	44.6	301	9.8	335.2	464	170.4	394
484	497	**MOLEX** Lisle, Ill.[2]	575.7	14.6	57.7	275	(2.7)	541.3	406	428.8	270
485	468	**UIS** New York	573.4	2.4	27.6	356	(22.3)	365.5	452	272.3	337
486	471	**SUN-DIAMOND GROWERS** Pleasanton, Calif.[18,27]	572.2	3.3	N.A.		–	289.0	478	115.0	425
487	441	**DIXIE YARNS** Chattanooga	570.8	(5.9)	11.7	401	(45.5)	346.5	459	184.7	388
488	•	**DELTA WOODSIDE INDUSTRIES** Greenville, S.C.[2]	569.4	16.5	30.3	344	9.6	331.0	467	127.1	416
489	456	**OXFORD INDUSTRIES** Atlanta[6]	566.2	(4.1)	9.9	405	–	213.1	485	107.6	430
490	499	**NCH** Irving, Texas[17]	565.6	12.9	36.3	320	21.2	373.4	450	202.9	372
491	483	**BIG THREE INDUSTRIES** Houston[35,58]	565.0	7.6	N.A.		–	N.A.		N.A.	
492	458	**ALLIED PRODUCTS** Chicago	564.6	(2.2)	(22.4)	438	(511.3)	487.0	421	114.7	427
493	489	**THOMAS & BETTS** Bridgewater, N.J.	561.8	9.2	53.7	286	(8.4)	564.3	397	335.5	306
494	493	**STANDARD PRODUCTS** Cleveland[2]	559.9	10.2	28.7	352	(15.8)	333.7	466	156.3	402
495	462	**CARLISLE** Syracuse, N.Y.	557.6	(1.7)	27.0	360	55.3	337.9	461	208.7	367
496	•	**LA-Z-BOY CHAIR** Monroe, Mich.[17]	556.3	14.3	27.5	357	3.7	349.0	458	194.3	380
497	492	**SCIENTIFIC-ATLANTA** Atlanta[2]	552.3	8.6	36.3	321	22.3	355.6	454	256.6	348
498	•	**WESTERN PUBLISHING GROUP** New York[23]	551.2	16.4	29.9	346	38.0	311.2	474	162.8	398
499	•	**LSI LOGIC** Milpitas, Calif.	546.9	–	(24.9)	444	–	765.2	350	297.3	327
500	477	**AFFILIATED PUBLICATIONS** Boston	543.1	1.7	16.4	391	–	467.7	431	201.1	375
		TOTALS	2,164,346.9		105,572.4			2,288,122.5		719,044.6	

MARKET VALUE 3/9/90		PROFITS AS A PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				INDUSTRY TABLE NUMBER	RANK
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from	1979-89 annual growth rate		1989		1979-89 annual average			
$ millions	Rank	%	Rank	%	Rank	%	Rank	1989/$	1988	%	Rank	%	Rank	%	Rank		1989
495.9	304	4.9	226	12.0	51	18.5	154	2.30	11.7	15.0	60	27.7	168	35.4	11	21	451
459.4	316	4.9	227	7.0	198	24.3	71	2.21	54.5	–		41.7	111	–		2	452
161.4	390	3.7	295	7.9	167	20.6	111	1.70	51.8	–		(0.2)	295	–		8	453
N.A.		4.1	275	3.6	326	29.5	44	N.A.	–	–		–		–		22	454
202.3	380	4.2	264	6.4	221	12.7	267	2.67	1.5	(2.2)	271	(8.7)	331	17.0	166	24	455
N.A.		3.2	321	2.7	357	5.7	370	0.49	–	(13.0)	308	N.A.		–		14	456
282.9	353	7.1	141	12.3	46	21.9	91	3.70	38.1	6.2	175	47.4	81	16.6	176	9	457
975.6	231	15.1	19	16.9	16	24.3	70	3.85	13.2	16.2	48	17.5	209	29.0	34	9	458
N.A.		0.4	412	2.1	381	8.2	338	0.70	(53.3)	2.0	235	(9.7)	334	(2.1)	341	8	459
77.5	409	(10.8)	468	(11.9)	471	–		(2.10)‡	–	–		(68.0)	413	–		5	460
N.A.		(1.9)	436	(3.4)	446	–		(3.03)‡	–	–		N.A.		–		11	461
622.3	287	4.5	248	9.7	97	21.4	97	1.58	(16.4)	6.5	173	110.7	6	20.1	118	10	462
997.5	227	(5.1)	458	(2.1)	436	–		(0.86)	–	–		60.0	44	(2.1)	338	16	463
759.1	263	3.4	311	2.6	361	8.0	344	0.80‡	158.1	(0.7)	262	(7.7)	324	19.1	131	20	464
202.1	381	1.9	367	3.3	343	7.6	354	1.39	672.2	18.3	33	51.7	64	(0.7)	335	16	465
392.8	329	4.5	249	5.6	245	12.3	273	2.53	4.1	4.9	201	3.8	276	9.3	282	20	466
3,436.2	89	20.9	6	9.7	95	–		1.87	(28.1)	(6.1)	288	45.5	89	17.3	159	16	467
180.7	386	0.2	416	0.8	406	1.2	398	0.68	(38.7)	(5.3)	286	165.6	2	21.2	108	5	468
277.0	355	(0.8)	427	(1.0)	427	(2.5)	410	(0.30)	(137.5)	–		(25.2)	383	1.2	330	22	469
476.9	308	5.7	192	10.2	80	13.9	243	1.62	(3.6)	7.7	155	31.3	155	21.9	101	10	470
323.3	346	4.4	255	7.8	169	21.7	94	2.61	0.4	6.7	170	14.9	218	13.4	228	23	471
631.9	286	4.1	271	3.9	317	11.7	285	1.35	17.4	11.0	107	51.2	67	14.9	207	22	472
466.8	314	11.5	42	6.4	220	19.5§	135	3.66	(1.6)	7.4	158	38.4	123	11.4	259	4	473
269.4	358	5.7	193	8.8	128	17.3	181	2.64	41.9	20.7	21	0.1	294	27.4	47	20	474
570.0	290	6.5	163	6.8	203	19.7	131	0.87	24.3	5.1	192	8.7	253	13.5	225	7	475
1,618.5	168	0.3	414	0.4	414	0.6	404	0.08	(97.9)	(27.0)	329	22.2	195	22.1	96	9	476
77.3	410	1.7	380	4.1	312	23.3	79	2.15	(37.0)	(6.5)	290	(1.1)	299	7.6	292	14	477
304.7	351	4.2	266	4.7	283	15.6	209	1.43	21.2	–		18.8	205	–		24	478
435.1	320	17.9	10	31.6	3	94.1	8	1.77	(50.1)	–		(47.5)	409	–		5	479
187.2	384	8.6	89	3.5	329	50.0§	17	3.30‡	–	23.1	14	84.7	15	14.9	208	14	480
N.A.		–		–		–		N.A.	–	–		–		–		8	481
948.8	235	3.7	294	1.1	403	3.8	387	0.46	142.1	(4.1)	277	96.7	8	7.6	291	16	482
520.4	295	7.7	115	13.3	35	26.2	55	2.23	13.2	13.3	80	44.7	96	30.9	24	23	483
1,068.1	216	10.0	67	10.7	73	13.5	249	2.28	(2.6)	15.1	59	1.4	290	21.1	109	7	484
N.A.		4.8	233	7.5	178	10.1	312	N.A.	–	–		–		–		17	485
N.A.		–		–		–		N.A.	–	–		–		–		8	486
140.7	396	2.1	362	3.4	336	6.3	366	1.13	(37.2)	5.5	186	(16.2)	358	–		24	487
139.1	397	5.3	206	9.1	115	23.8	78	1.65	3.8	–		8.9	251	–		24	488
108.7	404	1.7	377	4.6	285	9.2	327	0.99	–	5.9	184	25.3	183	21.3	106	2	489
503.5	301	6.4	168	9.7	91	17.9	166	4.06	23.4	7.3	161	46.8	83	13.4	227	5	490
N.A.		–		–		–		N.A.	–	–		–		–		5	491
35.1	416	(4.0)	456	(4.6)	457	(20.6)	429	(5.13)	(793.2)	–		(43.3)	405	(2.9)	339	11	492
930.1	240	9.6	74	9.5	103	16.0	201	3.16	(8.7)	4.9	199	9.8	247	13.0	233	7	493
227.1	370	5.1	214	8.6	135	18.3	157	2.71	(13.7)	18.7	28	(22.3)	377	32.0	21	21	494
249.2	361	4.8	231	8.0	157	12.9	262	3.34	54.6	5.1	196	(2.8)	307	14.1	220	21	495
313.3	350	4.9	224	7.9	166	14.1	238	1.54	6.2	14.1	67	(4.1)	310	25.8	58	10	496
519.5	297	6.6	158	10.2	79	14.1	237	1.53	22.4	13.3	79	82.3	17	11.1	264	7	497
373.3	333	5.4	203	9.6	101	17.8§	168	1.45	34.3	–		15.4	214	–		20	498
359.4	337	(4.6)	457	(3.3)	445	(8.4)	419	(0.60)	(200.0)	–		(33.7)	398	–		7	499
752.4	267	3.0	331	3.5	330	8.1	340	0.23	–	2.4	229	34.9	137	44.4	3	20	500
1,375,989.5																	

The definitions, explanations, and footnotes underlying the figures in this directory are on page 367.

DEFINITIONS AND EXPLANATIONS

SALES

All companies on the list must have derived more than 50% of their sales from manufacturing and/or mining. Sales of consolidated subsidiaries are included. Sales from discontinued operations are also included if these figures are published. If the sales are at least 10% higher for this reason, there is a symbol (¶) next to the sales figure. All figures are for the year ended December 31, 1989, unless otherwise noted. Sales figures do not include excise taxes collected by manufacturers, and so the figures for some corporations—most of which sell gasoline, liquor, or tobacco—may be lower than those published by the corporations themselves. If they are at least 5% lower for this reason, there is an asterisk (*) next to the sales figures.

PROFITS

Profits are shown after taxes and after extraordinary credits or charges if any appear on the income statement. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profits shown, a double dagger (‡) an extraordinary charge of at least 10%. Figures in parentheses indicate a loss. Profit declines over 100% reflect swings from 1988 profits to 1989 losses. Cooperatives provide only "net margin" figures, which are not comparable with the profits figures in these listings, and therefore N.A. is shown in that column.

ASSETS

Assets shown are those at the company's fiscal year-end.

STOCKHOLDERS' EQUITY

Stockholders' equity is the sum of capital stock, surplus, and retained earnings at the company's year-end. Redeemable preferred stock is excluded if its redemption is either mandatory or outside the control of the company, except in the case of cooperatives. For purposes of calculating "profits as percent of stockholders' equity," any dividends paid on redeemable preferred stock, if that stock's redemption is either mandatory or outside the control of the company, have been subtracted from the profit figure.

MARKET VALUE

The figure shown was arrived at by multiplying the number of common shares outstanding (at the latest date available) by the price per common share as of March 9, 1990.

EARNINGS PER SHARE

For all companies the figures shown are the primary earnings per share that appear on the company's income statement. Per share earnings for 1988 and 1979 are adjusted for stock splits and stock dividends. They are not restated for mergers, acquisitions, or accounting changes made after 1979. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profit shown, a double dagger (‡) an extraordinary charge of at least 10%. Results are listed as not available (N.A.) if the companies are cooperatives, joint ventures, or wholly owned subsidiaries of other companies, or if the figures were not published in 1979. The growth rate is the average annual growth, compounded.

TOTAL RETURN TO INVESTORS

Total return to investors includes both price appreciation and dividend yield to an investor in the company's stock. The figures shown assume sales at the end of 1989 of stock owned at the end of 1979 and 1988. It has been assumed that any proceeds from cash dividends, the sale of rights and warrant offerings, and stock received in spinoffs were reinvested when they were paid. Returns are adjusted for stock splits, stock dividends, recapitalizations, and corporate reorganizations as they occur; however, no effort has been made to reflect the cost of brokerage commissions or of taxes. Results are listed as not available (N.A.) if shares are not publicly traded or are traded on only a limited basis. If companies have more than one class of shares outstanding, only the more widely held and actively traded has been considered. Total return percentages shown are the returns received by the hypothetical investor described above. The ten-year figures are annual averages, compounded.

INDUSTRY TABLES

Industry table numbers used in the directory indicate the groups in which companies are placed in "The 500 by Industry, Ranked by 11 Measures," beginning on page 371. Companies are included in the industry that represents the greatest volume of their industrial sales. Industry groups are based on categories established by the U.S. Office of Management and Budget and issued by the Federal Statistical Policy and Standards Office. The median figures in the tables refer only to results of companies in the 500; no attempt has been made to calculate medians in groups with fewer than four companies.

Most of the figures in this FORTUNE 500 Directory were prepared by Ret Autry and Mark M. Colodny, who are responsible for the columns reporting on companies' sales, assets, profits, and stockholders' equity, and the industry table numbers. Figures on market value, earnings per share, and total return to investors were prepared by Claudine Knight and Kathleen Smyth.

FOOTNOTES TO THE 500

• Indicates that a company was not among the 500 in 1988.
* Does not include excise taxes; see the explanation of "sales" above.
** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" above.
N.A. Not available.
‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" above.
¶ Includes sales from discontinued operations of at least 10%; see the explanation of "sales" above.
§ Dividends paid or mandatory redeemable preferred stock subtracted from profits.

1

1 Owned by Royal Dutch/Shell Group (1988 International 500: rank 1).
2 Figures are for fiscal year ended June 30, 1989.
3 Figures include Sheller-Globe (1988 rank: 368), acquired November 9, 1989.
4 Name changed from RJR Nabisco.
5 Figures are for fiscal year ended September 30, 1989.
6 Figures are for fiscal year ended October 31, 1989.
7 Figures include Apollo Computer (1988 rank: 423), acquired May 18, 1989.
8 Figures are for fiscal year ended May 31, 1989.
9 Figures include Squibb (1988 rank: 166), acquired October 4, 1989.

10

10 Figures include Fabergé (1988 rank: 453), acquired August 3, 1989.
11 Owned by Unilever (1988 International 500 rank: 11).
12 Figures include Warner Communications (1988 rank: 109), acquired July 24, 1989.
13 Figures include A.H. Robins (1988 rank: 346), acquired December 15, 1989.
14 Owned by Philips' Gloeilampenfabrieken (1988 International 500 rank: 13).
15 Owned by Hoechst (1988 International 500 rank: 20).
16 Owned by Hanson (1988 International 500 rank: 62).
17 Figures are for fiscal year ended April 30, 1989.
18 Figures are for fiscal year ended July 31, 1989.
19 Owned by Bayer (1988 International 500 rank: 22).

20

20 Owned by BASF (1988 International 500 rank: 19).
21 Figures include Champion Spark Plug (1988 rank: 374), acquired March 23, 1989.
22 Owned by Petroleós de Venezuela (1988 International 500 rank: 68).
23 Figures are for fiscal year ended January 31, 1989.
24 Figures are for fiscal year ended February 28, 1989.
25 Owned by American Financial (1988 Service 500 rank: S-5).
26 Figures are for fiscal year ended November 30, 1989.
27 Cooperatives provide only net margin figures, which are not comparable to the profit figures on this list.
28 Figures include Emhart (1988 rank: 155), acquired July 18, 1989.
29 Figures include Chicago Pacific (1988 rank: 250), acquired January 26, 1989.

30

30 Owned by Petrofina (1988 International 500 rank: 63).
31 Consolidates Joseph E. Seagram & Sons.
32 Owned by Seagram (1988 International 500 rank: 288).
33 Figures are for fiscal year ended August 31, 1989.
34 Owned by Jefferson Smurfit Group (1988 International 500 rank: 431).
35 FORTUNE estimate.
36 Owned by National Intergroup (1988 Service 500: S-24).
37 Name changed from Corning Glass Works.
38 Separated into Morton International and Thiokol, July 1, 1989.
39 Figures are for fiscal year ended March 31, 1989.

40

40 Owned by McDermott International (1988 International 500 rank: 334).
41 Named changed from Diamond Shamrock R&M.
42 Acquired by Tyson Foods July 18, 1989.
43 Figures include Jepson (1988 rank: 467), acquired September 12, 1989.
44 Owned by Lafarge Coppée (1988 International 500 rank: 211).
45 Owned by Loews (1988 Service 500 rank: F-15).
46 Owned by Esselte (1988 International 500 rank: 335).
47 Consolidates Fieldcrest Cannon (1988 rank: 274).
48 Owned by Saint-Gobain (1988 International 500 rank: 64).
49 Figures include Wilson Foods (1988 rank: 276), acquired October 17, 1988.

50

50 Owned by ITT (1988 Service 500 rank: F-8).
51 Includes Armtek (1988 rank: 301), acquired October 1, 1988.
52 Owned by PacifiCorp (1988 Service 500 rank: U-21).
53 Name changed from Ohio Mattress.
54 Name changed from LPL Investment Group.
55 Acquired by Cooper Industries (rank: 101), November 29, 1989.
56 Name changed from George Bonta.
57 Figures include Fairchild Industries (1988 rank: 455), acquired August 18, 1989.
58 Owned by L'Air Liquide (1988 International 500 rank: 185).

ARRIVALS AND DEPARTURES

NEWCOMERS TO THE 500

AMOSKEAG	280
ANACOMP	416
CITGO PETROLEUM	105
CONNER PERIPHERALS	417
CRYSTAL BRANDS	372
DELTA WOODSIDE INDUSTRIES	488
DOSKOCIL	319
DRESSER-RAND	378
DURACELL HOLDINGS	300
ESSEX GROUP	335
EXIDE	411
FIRST BRANDS	309
GITANO GROUP	452
GREAT AMER. MGMT. & INVESTMENT	247
HELENE CURTIS INDUSTRIES	449
HUDSON FOODS	453
IMC FERTILIZER GROUP	304
IMPERIAL HOLLY	434
INTERFACE	478
ITT RAYONIER	331
J&L SPECIALTY PRODUCTS	377
JPS TEXTILE GROUP	382
LA-Z-BOY CHAIR	496
LEAR SIEGLER SEATING	340
LINCOLN ELECTRIC	423
LSI LOGIC	499
LYONDELL PETROCHEMICAL	93
MARK IV INDUSTRIES	409
ORYX ENERGY	303
READER'S DIGEST ASSOCIATION	225
ST. JOE PAPER	436
STANHOME	483
TEREX	369
THERMO ELECTRON	472
TREDEGAR INDUSTRIES	445
TRI VALLEY GROWERS	406
UNIROYAL GOODRICH TIRE	195
WESTERN PUBLISHING GROUP	498
WICKES	107

RETURNED TO THE 500

AFG INDUSTRIES (1987: 488)	435
CONE MILLS (1982: 398)	414
HARCOURT BRACE JOVANOVICH (1987: 268)	237
LEVI STRAUSS ASSOCIATES (1985: 148)	128
MARLEY (1980: 442)	461
NEWMONT MINING (1987: 450)	467
TESORO PETROLEUM (1977: 213)	396

DISPLACED FROM THE 500

	1988 SALES RANK
AMERICAN MAIZE-PRODUCTS	474
APOLLO COMPUTER [1]	423
ARMTEK [1]	301
ATARI	400
AVERY	479
BORDEN CHEMICALS & PLASTICS	472
BORG-WARNER [2]	142
BURLINGTON RESOURCES [2]	194
CHAMPION SPARK PLUG [1]	374
CHICAGO PACIFIC [1]	250
COLEMAN [2]	419
COMBUSTION ENGINEERING [2]	131
CONSTAR INTERNATIONAL	464
COOPER COS.	349
DR PEPPER/SEVEN-UP	491
EMHART [1]	155
FABERGÉ [4]	453
FAIRCHILD INDUSTRIES [1]	455
FARMERS UNION CENTRAL [2]	287
FIELDCREST CANNON [5]	274
FRUEHAUF [6]	196
GROW GROUP	495
J.P. INDUSTRIES	475
JEPSON [1]	467
MACMILLAN [7]	331
MEMOREX TELEX [2]	358
MINISCRIBE	444
MINSTAR	486
MOHASCO	373
NOXELL [1]	484
PACIFIC RESOURCES [8]	361
PENNWALT [9]	291
PILLSBURY [10]	70
ROBERTSON (H.H.)	494
ROBINS (A.H.) [1]	346
SHAKLEE [3]	432
SHELLER-GLOBE [1]	368
SIPCO [1]	141
SMITHKLINE BECKMAN [11]	97
SPRAGUE TECHNOLOGIES	487
SQUIBB [1]	166
TRIANGLE INDUSTRIES [12]	111
UNITED MERCHANTS & MFRS.	393
WARNER COMMUNICATIONS [1]	109
WILSON FOODS [1]	276
XIDEX [1]	427

* Figures in parentheses indicate year and sales rank the last time the company was listed.
[1] Acquired by another Industrial 500 company.
[2] No longer classified as industrial.
[3] Figures no longer made public.
[4] Consolidated into Unilever U.S. (rank: 56).
[5] Consolidated into Amoskeag (rank: 280).
[6] Acquired by Varity (1988 International 500 rank: 390) November 30, 1989.
[7] Acquired by Maxwell Communication (1988 International 500 rank: 381) November 19, 1988.
[8] Acquired by Broken Hill Proprietary (1988 International 500 rank: 104) May 11, 1989.
[9] Acquired by Elf Aquitaine (1988 International 500 rank: 25) August 4, 1989.
[10] Acquired by Grand Metropolitan (1988 International 500 rank: 76) January 3, 1989.
[11] Merged with Beecham Group (1988 International 500 rank: 188) July 26, 1989.
[12] Acquired by Pechiney (1988 International 500 rank: 83) December 22, 1988.

THE MONEY LOSERS

	SALES RANK	LOSS
RJR NABISCO HOLDINGS	24	$1,149,000,000
CONTROL DATA	153	680,400,000
UNISYS	43	639,300,000
WANG LABORATORIES	147	424,300,000
TIME WARNER	59	256,000,000
FORT HOWARD	336	239,400,000
PRIME COMPUTER	259	230,200,000
LONE STAR TECHNOLOGIES	432	191,400,000*
HENLEY GROUP	238	187,000,000*
HILLSBOROUGH HOLDINGS	236	186,300,000
MACK TRUCKS	215	185,400,000
NORTH AMERICAN PHILIPS	74	178,000,000
ANACOMP	416	170,800,000
WICKES	107	122,500,000
DATA GENERAL	290	119,700,000*
OWENS-ILLINOIS	125	108,100,000*
DURACELL HOLDINGS	300	105,900,000
HERCULES	145	81,300,000
NORTHROP	98	80,500,000
ENGELHARD	186	77,500,000
BRUNSWICK	159	71,300,000
ZENITH ELECTRONICS	169	68,400,000
REXENE	460	66,300,000
BORDEN	60	60,600,000
GAF	344	57,700,000
JPS TEXTILE GROUP	382	57,200,000
ALLEGHENY INT'L	358	54,900,000*
AMERICAN STANDARD	127	46,200,000*
INSILCO	398	43,400,000
NATIONAL GYPSUM	283	40,700,000*
MAXUS ENERGY	463	31,000,000*
TESORO PETROLEUM	396	30,500,000
LSI LOGIC	499	24,900,000
OHIO MATTRESS HOLDING	420	24,700,000
PERKIN-ELMER	324	24,200,000
IBC HOLDINGS	332	23,500,000*
NAT'L SEMICONDUCTOR	187	23,200,000
BURLINGTON HOLDINGS	199	23,000,000*
ALLIED PRODUCTS	492	22,400,000
WARNACO GROUP	446	20,800,000*
HARVARD INDUSTRIES	400	20,400,000
BRIGGS & STRATTON	364	20,000,000
WEST POINT-PEPPERELL	172	19,300,000
FINEVEST FOODS	422	19,000,000
EXIDE	411	16,600,000
SUDBURY	450	15,600,000
NORTEK	291	12,500,000
MARLEY	461	11,400,000
A.O. SMITH	339	9,600,000
LEAR SIEGLER SEATING	340	8,200,000
CUMMINS ENGINE	132	6,100,000*
FOXBORO	469	4,600,000
YORK HOLDINGS	278	2,300,000*
DWG	314	800,000

*Also lost money in 1988.

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																					
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
		$ Mil.	Rank	% change from 1988	Rank	$ Mil.	Rank	% change from 1988	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1979-89 annual growth rate %	Rank	1979-89 annual average %	Rank	1989 %	Rank	Number	Rank	% change from 1988
1 AEROSPACE 18 COMPANIES																							
BOEING 15		20,276	1	20	1	973	1	58	2	5	5	7	6	16	6	6	7	19	3	50	2	159,200	2	8
UNITED TECHNOLOGIES 17		19,766	2	9	4	702	3	7	5	4	8	5	8	15	8	5	8	14	7	36	3	201,400	1	8
MCDONNELL DOUGLAS 25		14,995	3	(1)	13	219	8	(37)	13	1	14	2	15	7	14	1	13	8	13	(16)	12	127,926	3	5
ROCKWELL INTERNATIONAL 29		12,633	4	6	6	735	2	(9)	7	6	3	8	4	18	5	12	3	19	2	13	6	108,715	4	(3)
ALLIED-SIGNAL 31		12,021	5	1	11	528	4	14	3	4	6	5	7	15	7	39	1	7	15	13	7	107,100	5	(2)
GENERAL DYNAMICS 44		10,053	6	5	7	293	6	(23)	12	3	11	4	9	14	9	7	5	6	16	(10)	11	102,200	6	(1)
LOCKHEED 45		9,932	7	(7)	16	2	16	(100)	15	0	16	0	16	0	16	(31)	16	15	6	(2)	10	82,500	7	(5)
TEXTRON 61		7,440	8	5	8	259	7	11	4	3	9	2	14	10	10	3	12	12	9	8	9	58,000	9	(3)
MARTIN MARIETTA 84		5,814	9	2	10	307	5	(14)	9	5	4	9	2	23	2	11	4	16	4	12	8	65,500	8	(3)
NORTHROP 98		5,200	10	(10)	17	(81)	17	(177)	16	(2)	17	(3)	17	(9)	17	–		6	17	(34)	17	41,000	10	(8)
GRUMMAN 129		3,559	11	(1)	14	67	11	(22)	11	2	13	3	12	8	13	6	6	8	14	(18)	13	28,900	11	(10)
SEQUA 207		2,073	12	6	5	56	13	(19)	10	3	12	3	11	8	12	4	11	13	8	28	5	17,700	12	10
GENCORP 211		2,001	13	(2)	15	210	9	200	1	10	1	17	1	135	1	21	2	12	10	(26)	14	15,100	13	(3)
HENLEY GROUP 238		1,693	14	(42)	18	(187)	18	–		(11)	18	(5)	18	(16)	18	–		–		–		11,400	16	70
SUNDSTRAND 243		1,666	15	13	3	114	10	–		7	2	8	5	20	3	4	9	9	12	33	4	13,700	14	(5)
CRANE 267		1,456	16	0	12	56	12	(11)	8	4	7	9	3	20	4	4	10	19	1	55	1	10,737	17	(1)
ROHR INDUSTRIES 337		1,048	17	16	2	33	14	3	6	3	10	3	10	8	11	(3)	15	11	11	(27)	16	12,000	15	9
KAMAN 385		802	18	5	9	9	15	(66)	14	1	15	2	13	5	15	0	14	16	5	(26)	15	6,424	18	1
TOTAL		132,427		6		4,296		(12)		–		–		–		–		–		–		1,189,502		2
MEDIAN		5,507		3		162		(12)		3		4		12		5		12		8		40,500		(2)
2 APPAREL 13 COMPANIES																							
LEVI STRAUSS ASSOC. 128		3,628	1	–		272	1	–		8	3	13	2	65	1	–		–		–		31,000	2	–
VF 173		2,540	2	1	10	176	2	1	6	7	4	9	3	21	6	19	2	33	2	14	8	45,000	1	5
CLAIBORNE (LIZ) 276		1,411	3	19	5	165	3	49	1	12	1	19	1	27	3	–		–		40	4	5,578	11	19
FRUIT OF THE LOOM 292		1,321	4	31	3	72	4	7	5	5	5	4	10	22	5	–		–		133	1	26,000	3	11
HARTMARX 294		1,312	5	12	8	17	11	(54)	9	1	12	2	12	5	12	(2)	6	19	6	(15)	11	23,500	4	4
CRYSTAL BRANDS 372		857	6	98	1	19	10	(6)	7	2	10	3	11	8	11	–		–		29	5	10,400	9	(7)
LESLIE FAY 390		786	7	15	6	26	8	16	3	3	8	7	7	16	8	–		–		8	9	4,300	12	23
KELLWOOD 402		754	8	8	9	34	6	11	4	4	7	7	5	18	7	21	1	26	3	(14)	10	15,000	5	6
RUSSELL 428		688	9	30	4	64	5	19	2	9	2	9	4	16	9	14	3	34	1	64	2	13,580	6	7
PHILLIPS-VAN HEUSEN 444		642	10	13	7	21	9	(31)	8	3	9	6	8	64	2	9	4	22	4	18	7	9,000	10	13
WARNACO GROUP 446		636	11	(3)	11	(21)	13	–		(3)	13	(4)	13	–		–		–		–		10,600	8	(9)
GITANO GROUP 452		626	12	35	2	31	7	–		5	6	7	6	24	4	–		–		42	3	–		–
OXFORD INDUSTRIES 489		566	13	(4)	12	10	12	–		2	11	5	9	9	10	6	5	21	5	25	6	11,240	7	(4)
TOTAL		15,767		74		885		94		–		–		–		–		–		–		203,198		44
MEDIAN		786		14		31		7		4		7		18		12		24		25		12,410		6
3 BEVERAGES 7 COMPANIES																							
PEPSICO 23		15,420	1	19	2	901	2	18	4	6	5	6	5	23	4	14	4	27	3	65	2	286,000	1	13
ANHEUSER-BUSCH 49		9,481	2	6	5	767	3	7	5	8	4	9	3	25	3	18	1	29	1	25	4	46,666	2	13
COCA-COLA 51		9,171	3	10	4	1,724	1	68	1	19	1	21	1	49	1	16	3	27	2	77	1	20,980	3	12
COCA-COLA ENTERPRISES 121		3,889	4	0	6	72	6	(53)	6	2	6	2	6	4	6	–		–		7	5	20,000	4	(9)
SEAGOLD VINEYARDS HLDG. 150		3,005	5	37	1	514	4	23	3	17	2	7	4	12	5	–		–		–		11,857	5	16
COORS (ADOLPH) 231		1,770	6	16	3	13	7	(72)	7	1	7	1	7	1	7	(16)	5	6	5	1	6	10,600	6	1
BROWN-FORMAN 343		1,012	7	(5)	7	144	5	40	2	14	3	14	2	25	2	17	2	24	4	57	3	8,500	7	(2)
TOTAL		43,747		11		4,136		28		–		–		–		–		–		–		381,525		11
MEDIAN		3,889		10		514		18		8		7		23		16		27		41		20,000		12
4 BUILDING MATERIALS 15 COMPANIES																							
OWENS-ILLINOIS 125		3,692	1	3	9	(108)	13	–		(3)	12	(2)	12	–		–		–		–		47,000	1	1
AMERICAN STANDARD 127		3,631	2	(2)	12	(46)	12	–		(1)	11	(1)	10	(63)	9	–		–		–		33,300	2	(2)
OWENS-CORNING FIBER. 149		3,021	3	7	6	172	3	(9)	6	6	7	9	3	–		1	5	23	1	13	5	18,300	4	4
CORNING 181		2,469	4	16	1	261	1	24	2	11	3	8	4	15	4	5	2	15	3	27	3	27,500	3	5
MANVILLE 197		2,228	5	1	10	197	2	–		9	4	8	5	20	1	(27)	8	(24)	8	28	2	17,000	5	(9)
USG 198		2,201	6	(22)	14	28	9	(78)	8	1	9	2	9	–		(12)	7	19	2	(30)	8	14,200	7	(7)
NORTON 257		1,535	7	9	4	105	4	10	4	7	5	9	2	17	3	0	6	11	6	27	4	16,600	6	3
LAFARGE 261		1,497	8	14	2	100	5	7	5	7	6	6	6	12	6	–		–		5	7	8,200	9	17

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																			
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
		$ Mil.	Rank	% change from 1988	Rank	$ Mil.	Rank	% change from 1988	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1979-89 annual growth rate %	Rank	1979-89 annual average %	Rank	1989 %	Rank	Number	Rank	% change from 1988
	CERTAINTEED 282	1,365	9	8	5	30	8	(46)	7	2	8	3	8	4	7	2	4	–		–		8,200	9	2
	NATIONAL GYPSUM 283	1,364	10	12	3	(41)	11	–		(3)	13	(3)	13	(112)	10	–		–		–		6,400	10	2
	NORTEK 291	1,323	11	(7)	13	(13)	10	(164)	9	(1)	10	(1)	11	(6)	8	–		0	7	(39)	9	9,627	8	(10)
	ANCHOR GLASS 338	1,040	12	6	7	–		–		–		–		–		–		–		–		–		–
	CALMAT 426	690	13	5	8	78	6	39	1	11	2	10	1	15	5	5	3	11	4	9	6	2,910	12	(12)
	AFG INDUSTRIES 435	666	14	–		–		–		–		–		–		–		–		–		–		–
	SOUTHDOWN 473	593	15	(1)	11	68	7	20	3	11	1	6	7	19	2	7	1	11	5	38	1	3,300	11	(6)
	TOTAL	27,315		(5)		832		–		–		–		–		–		–		–		212,537		(10)
	MEDIAN	1,497		6		68		7		2		3		0		2		11		13		15,400		1
5	**CHEMICALS** 49 COMPANIES																							
	DU PONT (E.I.) DE NEMOURS 9	35,209	1	8	18	2,490	2	13	10	7	19	7	22	16	20	5	17	18	13	45	7	145,787	1	3
	DOW CHEMICAL 20	17,730	2	6	21	2,487	1	4	21	14	5	11	8	31	5	12	4	18	11	26	15	62,111	2	12
	UNION CARBIDE 53	8,744	3	5	27	573	5	(13)	28	7	23	7	23	24	9	4	19	16	18	(8)	30	45,967	5	5
	MONSANTO 55	8,681	4	5	29	679	4	15	9	8	16	8	18	17	17	8	9	20	7	45	5	42,175	6	(8)
	GRACE (W.R.) 76	6,115	5	(1)	39	253	10	8	12	4	32	5	30	8	31	2	21	11	27	32	13	48,300	4	6
	HOECHST CELANESE 77	6,016	6	6	22	267	9	7	15	4	30	4	31	8	29	–		–		–		22,900	12	(3)
	HANSON IND. NA 79	5,933	7	(9)	43	761	3	153	1	13	6	13	5	31	6	–		–		–		59,181	3	(26)
	PPG INDUSTRIES 83	5,825	8	4	33	465	6	(1)	24	8	15	8	14	20	12	9	6	24	4	2	27	35,500	7	(2)
	BAYER USA 91	5,425	9	15	4	154	18	24	3	3	34	3	34	8	30	–		–		–		29,616	9	14
	BASF 92	5,422	10	8	17	90	30	(40)	34	2	38	3	38	7	32	–		–		–		21,557	13	(1)
	LYONDELL PETROCHEM. 93	5,374	11	14	5	374	7	(31)	31	7	20	30	3	–	1	–		–		–		2,070	41	3
	AMERICAN CYANAMID 106	4,825	12	5	26	292	8	(4)	26	6	25	6	28	13	27	6	15	17	15	18	20	38,384	8	0
	FMC 133	3,461	13	5	24	136	20	6	18	4	33	5	29	–		(2)	24	25	3	10	24	24,110	10	(1)
	HERCULES 145	3,121	14	11	8	(81)	45	(168)	44	(3)	42	(2)	42	(4)	39	–		12	26	(8)	31	23,290	11	3
	ETHYL 162	2,755	15	1	36	231	12	0	23	8	12	4	32	26	8	12	5	28	2	37	12	5,500	31	(47)
	AIR PRODS. & CHEM. 166	2,662	16	9	13	222	13	4	20	8	13	7	24	15	22	9	8	13	24	20	17	14,100	18	6
	ROHM & HAAS 167	2,661	17	5	28	176	15	(23)	29	7	22	7	21	13	24	7	12	20	8	5	26	13,132	19	6
	QUANTUM CHEMICAL 168	2,637	18	(19)	47	247	11	(35)	33	9	11	8	15	–		9	7	14	20	(44)	37	10,000	22	(9)
	OLIN 175	2,530	19	10	12	124	21	27	2	5	28	7	25	19	14	7	11	18	12	22	16	15,400	17	(6)
	GOODRICH (B.F.) 176	2,521	20	0	37	172	16	(12)	27	7	21	8	19	13	23	3	20	13	22	(17)	34	11,892	20	(3)
	ENGELHARD 186	2,403	21	2	34	(77)	44	(222)	45	(3)	43	(6)	44	(12)	40	–		–		15	22	8,100	24	(2)
	VALHI 188	2,381	22	6	23	103	28	20	7	4	31	3	35	36	4	18	3	15	19	51	3	16,500	16	2
	MORTON THIOKOL 194	2,269	23	(2)	40	–		–		–		–		–		–		–		–		20,500	14	0
	SHERWIN-WILLIAMS 203	2,130	24	9	15	109	26	8	14	5	26	8	17	16	18	20	1	20	1	39	11	16,726	15	1
	CABOT 216	1,944	25	16	3	18	38	(70)	39	1	39	1	39	4	36	(13)	28	13	25	(2)	29	5,500	31	7
	GT. AMER. MGMT. & INVST. 247	1,643	26	34	2	2	40	(75)	40	0	41	0	41	1	38	(28)	30	22	5	32	14	11,700	21	10
	WITCO 252	1,600	27	1	35	35	36	(82)	38	2	35	3	36	6	34	(3)	26	16	16	15	21	7,385	27	(3)
	HIMONT 253	1,600	28	(6)	42	–		–		–		–		–		–		–		40	9	4,000	39	11
	DOW CORNING 254	1,575	29	7	20	163	17	8	13	10	10	10	12	19	13	–		–		–		7,600	26	4
	INSPIRATION RESOURCES 274	1,420	30	4	31	25	37	(40)	35	2	37	3	37	6	35	(15)	29	–		(10)	32	4,730	36	13
	IMC FERTILIZER GROUP 304	1,233	31	14	6	137	19	23	4	11	8	8	16	18	15	–		–		(21)	36	5,900	30	7
	LUBRIZOL 306	1,228	32	10	11	94	29	(33)	32	8	18	10	10	6	33	1	22	8	29	9	25	5,307	34	11
	HANNA (M.A.) 322	1,114	33	9	14	87	31	4	19	8	17	8	13	16	19	(2)	25	4	30	43	8	6,791	29	(28)
	GEORGIA GULF 323	1,107	34	4	30	192	14	(1)	25	17	2	41	1	58	3	–		–		18	18	1,380	45	(1)
	FERRO 327	1,102	35	9	16	50	33	7	16	5	29	7	20	16	21	5	16	18	10	18	19	8,045	25	(1)
	NALCO CHEMICAL 329	1,094	36	10	9	120	23	13	11	11	9	13	6	27	7	7	14	16	17	45	6	5,400	32	2
	GAF 344	1,011	37	5	25	(58)	42	(157)	43	(6)	44	(3)	43	–		–		–		–		4,542	37	(2)
	ARISTECH CHEMICAL 348	998	38	(6)	41	82	32	(56)	37	8	14	11	7	20	11	–		–		13	23	1,870	42	10
	INT'L MIN. & CHEM. 352	983	39	(33)	48	117	25	3	22	12	7	6	27	13	26	0	23	9	28	20	10	6,900	28	–
	DEXTER 371	859	40	4	32	43	34	21	6	5	27	6	26	13	25	5	18	13	23	2	28	5,400	33	–
	CF INDUSTRIES 373	856	41	(11)	44	–		–		–		–		–		–		–		–		1,470	44	(3)
	GREAT LAKES CHEMICAL 379	848	42	38	1	123	22	19	8	14	4	11	9	21	10	18	2	19	9	64	2	5,000	35	72
	VISTA CHEMICAL 392	779	43	(0)	38	120	24	6	17	15	3	21	4	–		–		–		(19)	35	1,750	43	3
	FULLER (H.B.) 403	753	44	10	10	16	39	(26)	30	2	36	3	33	8	28	7	13	17	14	(16)	33	5,400	33	4
	REXENE 460	613	45	(15)	45	(66)	43	(151)	42	(11)	45	(12)	45	–		–		–		(66)	39	1,020	46	(21)
	TYLER 468	602	46	(40)	49	1	41	(93)	41	0	40	1	40	1	37	(9)	27	21	6	100	1	4,306	38	(26)
	STERLING CHEMICALS 479	591	47	(17)	46	104	27	(51)	36	18	1	32	2	94	2	–		–		(48)	38	920	47	0
	NCH 490	566	48	13	7	36	35	21	5	6	24	10	11	18	16	7	10	13	21	47	4	9,757	23	9
	BIG THREE INDUSTRIES 491	565	49	8	19	–		–		–		–		–		–		–		–		2,400	40	–

RANKED WITHIN INDUSTRY BY 11 MEASURES

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	SALES $ MIL.	Rank	SALES % change from 1988	Rank	PROFITS $ MIL.	Rank	PROFITS % change from 1988	Rank	PROFITS AS % OF SALES %	Rank	PROFITS AS % OF ASSETS %	Rank	PROFITS AS % OF EQUITY %	Rank	EARNINGS PER SHARE 1979-89 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1979-89 annual average %	Rank	TOTAL RETURN TO INVESTORS 1989 %	Rank	EMPLOYEES Number	Rank	EMPLOYEES % change from 1988
	TOTAL	173,509		7		11,680		(6)		—		—		—		—		—		—		854,259		—
	MEDIAN	1,944		5		120		0		6		7		13		6		17		18		8,100		1
6	**COMPUTERS (INCLUDES OFFICE EQUIPMENT)** 22 COMPANIES																							
	IBM 4	63,438	1	$	14	3,758	1	(35)	14	6	11	5	13	10	15	2	9	8	9	(19)	14	383,220	1	(1)
	DIGITAL EQUIPMENT 27	12,866	2	12	10	1,073	2	(18)	12	8	6	10	3	13	9	15	5	9	8	(17)	11	125,900	2	4
	HEWLETT-PACKARD 33	11,899	3	21	7	829	3	2	8	7	9	8	8	15	6	15	6	13	6	(11)	9	95,000	3	9
	UNISYS 43	10,097	4	2	16	(639)	21	(194)	17	(6)	18	(8)	18	(16)	18	—		(1)	10	(45)	21	82,300	4	(12)
	NCR 78	5,956	5	(1)	18	412	5	(6)	9	7	10	9	6	21	3	9	8	16	5	13	6	56,000	5	(7)
	APPLE COMPUTER 96	5,284	6	30	4	454	4	13	4	9	4	17	1	31	1	—		—		(12)	10	12,066	11	12
	WANG LABORATORIES 147	3,078	7	0	17	(424)	20	(558)	18	(14)	20	(16)	20	(38)	20	—		(4)	12	(41)	19	28,334	8	(10)
	PITNEY BOWES 152	2,959	8	11	11	253	7	4	7	9	5	5	15	18	5	12	7	23	1	14	5	31,404	6	7
	CONTROL DATA 153	2,952	9	(19)	21	(680)	22	—	20	(23)	22	(37)	21	(165)	21	—		(3)	11	(8)	8	18,000	9	(46)
	COMPAQ COMPUTER 157	2,876	10	39	3	333	6	31	2	12	1	16	2	28	2	—		—		33	4	9,500	14	46
	AMDAHL 201	2,154	11	20	8	153	8	(32)	13	7	8	7	10	13	10	18	4	10	7	(29)	15	8,200	17	(1)
	SUN MICROSYSTEMS 232	1,769	12	68	2	61	12	(8)	10	3	15	5	14	9	16	—		—		4	7	10,200	12	44
	TANDEM COMPUTERS 246	1,644	13	25	6	118	9	25	3	7	7	7	9	12	14	28	1	21	2	36	3	9,548	13	11
	PRIME COMPUTER 259	1,518	14	(5)	20	(230)	19	—	19	(15)	21	—		—		—		—		—		—		—
	SEAGATE TECHNOLOGY 281	1,382	15	9	12	0	17	(100)	16	0	17	0	17	0	17	—		—		74	1	29,000	7	(3)
	DATA GENERAL 290	1,324	16	(3)	19	(120)	18	—		(9)	19	(12)	19	(23)	19	—		(8)	13	(32)	17	13,740	10	(11)
	STORAGE TECHNOLOGY 342	1,014	17	16	9	48	13	8	6	5	13	5	12	14	8	(19)	11	(24)	15	(33)	18	9,100	15	7
	SCI SYSTEMS 351	990	18	28	5	21	16	10	5	2	16	3	16	12	13	26	2	19	3	(43)	20	8,578	16	(4)
	INTERGRAPH 365	874	19	9	13	80	11	(10)	11	9	3	10	4	13	12	—		—		(18)	13	8,200	17	12
	AM INTERNATIONAL 374	855	20	(34)	22	31	15	—		4	14	5	11	13	11	(10)	10	(13)	14	(18)	12	7,523	18	0
	CRAY RESEARCH 391	785	21	4	15	89	10	(43)	15	11	2	9	5	15	7	25	3	18	4	(31)	16	4,708	20	(10)
	CONNER PERIPHERALS 417	709	22	176	1	41	14	110	1	6	12	9	7	21	4	—		—		67	2	5,000	19	—
	TOTAL	136,424		5		5,860		(47)		—		—		—		—		—		—		955,423		(8)
	MEDIAN	1,961		10		70		(9)		6		5		13		15		9		(17)		12,904		(1)
7	**ELECTRONICS** 44 COMPANIES																							
	GENERAL ELECTRIC 5	55,264	1	12	15	3,939	1	16	13	7	9	3	33	19	10	11	9	22	5	49	9	292,000	1	(2)
	WESTINGHOUSE ELECTRIC 28	12,844	2	3	34	922	2	12	15	7	8	5	25	21	5	—		27	2	46	11	121,963	2	2
	MOTOROLA 48	9,620	3	17	8	498	6	12	16	5	19	6	16	13	27	9	17	15	13	41	13	104,000	3	2
	RAYTHEON 52	8,796	4	7	23	529	5	8	21	6	13	10	8	22	4	10	12	11	23	7	24	77,600	4	2
	TRW 62	7,408	5	6	25	363	11	1	23	4	27	5	23	15	20	4	25	14	14	23	18	74,300	5	2
	HONEYWELL 65	7,342	6	1	35	604	3	—		8	6	11	2	31	3	9	14	11	19	50	8	66,312	8	(17)
	EMERSON ELECTRIC 67	7,071	7	6	24	588	4	11	19	8	7	11	4	19	9	9	16	17	10	33	16	72,600	7	3
	TEXAS INSTRUMENTS 71	6,592	8	5	30	292	8	(20)	32	4	21	6	18	12	28	2	28	4	28	(11)	32	73,854	6	(2)
	WHIRLPOOL 73	6,289	9	42	3	187	13	99	5	3	32	3	30	13	26	6	19	19	8	38	14	30,411	13	35
	NORTH AMERICAN PHILIPS 74	6,203	10	14	11	(178)	43	(325)	38	(3)	40	(5)	40	(13)	39	—		—		—		58,800	10	(1)
	LITTON INDUSTRIES 100	5,130	11	5	29	178	14	7	22	3	28	3	31	14	23	5	22	9	25	7	22	50,700	11	(8)
	COOPER INDUSTRIES 101	5,129	12	20	5	268	10	19	11	5	18	4	28	10	31	3	26	14	14	53	6	58,100	9	25
	TELEDYNE 109	4,664	13	6	26	259	12	(34)	34	6	17	6	12	11	30	5	23	18	9	4	27	43,200	12	(1)
	INTEL 137	3,281	14	14	12	391	7	(14)	29	12	1	10	9	15	19	13	6	12	18	46	12	22,200	19	7
	MAYTAG 146	3,089	15	62	2	131	15	(17)	31	4	22	5	22	3	35	4	24	19	7	5	26	26,019	17	101
	AMP 160	2,821	16	6	28	281	9	(12)	27	10	4	11	3	17	14	9	15	15	12	3	28	24,400	18	1
	ZENITH ELECTRONICS 169	2,611	17	(3)	38	(68)	41	(685)	39	(3)	39	(7)	43	(17)	40	—		4	29	(33)	35	32,000	16	(11)
	HARRIS 180	2,477	18	20	6	21	34	(79)	35	1	36	1	36	2	36	(14)	30	3	30	36	17	35,100	14	55
	NAT'L SEMICONDUCTOR 187	2,400	19	(3)	39	(23)	38	(137)	36	(1)	37	(2)	37	(3)	37	—		(1)	32	(28)	34	32,200	15	(15)
	GENERAL SIGNAL 219	1,925	20	9	19	78	22	211	1	4	25	6	20	16	17	2	29	6	26	5	25	19,377	21	2
	SQUARE D 234	1,723	21	4	33	102	16	(14)	30	6	14	7	13	18	13	3	27	14	15	15	19	19,300	22	(7)
	E-SYSTEMS 248	1,633	22	13	13	83	20	11	18	5	20	10	10	15	21	13	7	16	11	7	24	17,920	23	7
	NAT'L SERVICE IND. 255	1,540	23	9	21	95	17	10	20	6	12	11	5	15	18	9	13	24	4	34	15	20,800	20	2
	LORAL 260	1,500	24	4	32	88	18	18	12	6	15	6	19	17	15	16	3	11	22	(6)	30	9,700	30	(29)
	GENERAL INSTRUMENT 263	1,481	25	13	14	86	19	29	8	6	16	7	15	14	24	6	18	10	24	53	5	15,900	24	3
	RELIANCE ELECTRIC 275	1,411	26	(9)	41	49	25	104	4	3	29	4	26	327	1	—		—		—		13,000	26	(25)
	VARIAN ASSOCIATES 287	1,345	27	15	9	32	31	14	14	2	34	3	32	7	33	10	11	5	27	(22)	33	12,100	28	3
	DURACELL HOLDINGS 300	1,254	28	—		(106)	42	—		(8)	43	(3)	41	(46)	41	—		—		—		8,500	32	—
	ADVANCED MICRO DEV. 325	1,105	29	(2)	37	46	26	138	3	4	23	4	27	7	34	10	10	3	31	(9)	31	13,000	26	(12)
	WESTERN DIGITAL 349	994	30	29	4	34	29	(21)	33	3	30	6	21	11	29	—		11	21	(43)	37	6,394	34	(3)

INDUSTRY TABLE NUMBER / COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																					
	SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
	$ Mil.	Rank	% change from 1988	Rank	$ Mil.	Rank	% change from 1988	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1979-89 annual growth rate %	Rank	1979-89 annual average %	Rank	1989 %	Rank	Number	Rank	% change from 1988
MAGNETEK 355	962	31	6	27	18	36	(6)	25	2	35	3	34	19	12	–		–		–		14,131	25	7
ALLEGHENY INT'L 358	950	32	(2)	36	(55)	40	–		(6)	42	(6)	42	–		–		(35)	33	(83)	38	11,800	29	(3)
PITTWAY 375	854	33	11	18	33	30	(12)	28	4	26	5	24	9	32	–		–		–		8,700	31	12
VALMONT INDUSTRIES 388	790	34	19	7	21	35	35	6	3	33	6	17	21	6	16	2	29	1	69	4	4,200	40	7
MARK IV INDUSTRIES 409	742	35	84	1	23	33	34	7	3	31	2	35	20	7	29	1	–		91	2	12,800	27	151
EXIDE 411	725	36	11	17	(17)	37	(183)	37	(2)	38	(3)	39	–		–		–		–		5,600	37	–
HUBBELL 430	684	37	11	16	79	21	11	17	12	2	14	1	19	11	11	8	24	3	46	10	5,320	38	3
LPL TECHNOLOGIES 431	680	38	5	31	28	32	201	2	4	24	4	29	82	2	–		–		140	1	7,393	33	10
SSMC 447	635	39	(5)	40	–		–		–		–		–		–		–		51	7	–		–
AMETEK 475	588	40	(16)	42	38	27	25	9	7	11	7	14	20	8	5	20	13	16	9	21	5,900	36	13
MOLEX 484	576	41	15	10	58	23	(3)	24	10	3	11	6	13	25	15	4	21	6	1	29	6,271	35	6
THOMAS & BETTS 493	562	42	9	20	54	24	(8)	26	10	5	10	11	16	16	5	21	13	17	10	20	5,000	39	6
SCIENTIFIC-ATLANTA 497	552	43	9	22	36	28	22	10	7	10	10	7	14	22	13	5	11	20	82	3	3,420	42	(1)
LSI LOGIC 499	547	44	–		(25)	39	–		(5)	41	(3)	38	(8)	38	–		–		(34)	36	3,706	41	–
TOTAL	184,686		10		9,960		8		–		–		–		–		–		–		1,551,991		3
MEDIAN	1,586		9		78		10		4		5		14		9		13		12.6		19,339		2
8 FOOD 50 COMPANIES																							
PHILIP MORRIS 7	39,069	1	51	2	2,946	1	26	12	8	5	8	17	31	7	20	3	30	8	69	6	157,000	1	1
OCCIDENTAL PETROLEUM 16	20,068	2	3	37	285	10	(6)	24	1	30	1	33	5	32	(18)	26	10	27	28	17	53,500	6	2
RJR NABISCO HOLDINGS 24	15,224	3	(10)	45	(1,149)	38	(182)	34	(8)	38	(3)	36	(93)	37	–		–		–		48,000	8	(59)
SARA LEE 34	11,738	4	13	17	410	7	26	11	3	22	6	24	21	17	15	9	32	5	64	8	100,000	2	17
CONAGRA 36	11,340	5	20	7	198	12	28	10	2	29	5	28	21	19	15	8	35	3	51	12	48,131	7	12
ARCHER DANIELS 57	8,057	6	19	9	425	4	20	16	5	12	9	11	14	28	18	5	16	25	75	5	10,214	23	13
BORDEN 60	7,593	7	5	34	(61)	37	(119)	33	(1)	35	(1)	35	(4)	35	–		30	9	19	18	46,500	9	0
RALSTON PURINA 69	6,712	8	9	24	423	5	9	21	6	11	10	8	49	2	18	4	27	16	3	27	56,219	4	(1)
HEINZ (H.J.) 82	5,832	9	11	19	440	3	14	18	8	4	11	6	25	10	15	7	31	6	54	10	36,200	12	(7)
GENERAL MILLS 85	5,798	10	0	43	414	6	46	6	7	7	14	3	57	1	13	14	25	17	44	15	83,837	3	13
QUAKER OATS 87	5,724	11	7	28	203	11	(21)	27	4	21	6	23	18	23	8	21	28	13	11	21	31,700	14	1
CAMPBELL SOUP 88	5,710	12	17	10	13	32	(95)	32	0	34	0	34	1	34	(21)	27	28	12	90	3	55,412	5	15
CPC INTERNATIONAL 102	5,129	13	9	23	328	8	13	19	6	10	9	12	27	9	8	20	23	20	46	13	33,542	13	5
KELLOGG 108	4,666	14	7	29	470	2	(2)	23	10	3	14	4	29	8	14	10	27	14	8	23	17,268	17	(1)
BEATRICE 111	4,498	15	(40)	49	325	9	(39)	30	7	6	9	13	40	3	–		–		–		16,400	18	(17)
WHITMAN 118	4,024	16	3	40	191	13	(18)	25	5	15	5	26	21	18	(5)	25	23	19	(17)	32	25,188	15	(1)
UNITED BRANDS 123	3,851	17	10	22	68	20	12	20	2	28	4	29	15	26	11	16	19	24	8	24	44,000	10	5
AGWAY 140	3,235	18	(11)	46	–		–		–		–		–		–		–		–		15,100	19	(10)
FARMLAND INDUSTRIES 151	2,977	19	6	32	–		–		–		–		–		–		–		–		6,275	31	8
TYSON FOODS 174	2,538	20	31	3	101	17	24	13	4	16	4	30	22	15	26	1	43	2	44	14	42,000	11	62
LAND O'LAKES 183	2,442	21	4	36	–		–		–		–		–		–		–		–		5,836	33	(13)
HERSHEY FOODS 185	2,421	22	(5)	44	171	14	(20)	26	7	8	9	10	15	24	12	15	29	10	41	16	11,800	22	(2)
HORMEL (GEO. A.) 190	2,341	23	2	42	70	19	16	17	3	25	10	9	15	25	9	19	27	15	56	9	8,000	27	0
CENTRAL SOYA 192	2,318	24	6	33	15	31	33	9	1	32	2	32	4	33	–		–		–		3,474	38	3
HOLLY FARMS 214	1,964	25	24	6	44	22	21	15	2	26	5	25	10	30	2	24	–		–		18,978	16	27
INT'L MULTIFOODS 224	1,883	26	11	20	35	26	6	22	2	27	5	27	12	29	5	22	15	26	9	22	9,015	26	0
MID-AMERICA DAIRYMEN 228	1,798	27	9	26	–		–		–		–		–		–		–		–		4,000	36	–
DEAN FOODS 240	1,686	28	9	25	60	21	41	8	4	20	10	7	21	20	17	6	33	4	13	20	7,500	30	6
MCCORMICK 299	1,263	29	7	31	136	15	218	3	11	1	16	2	39	4	22	2	21	21	89	4	7,554	29	(1)
GOLD KIST 308	1,216	30	17	11	–		–		–		–		–		–		–		–		9,500	24	4
GERBER PRODUCTS 312	1,190	31	2	41	81	18	284	2	7	9	12	5	25	12	11	17	30	7	66	7	14,691	21	0
DOSKOCIL 319	1,148	32	350	1	–		–		–		–		–		–		–		(10)	31	–		–
SAVANNAH FOODS & IND. 328	1,097	33	20	8	41	23	105	4	4	17	9	14	24	13	–		49	1	204	1	1,815	47	9
IBC HOLDINGS 332	1,080	34	26	5	(23)	36	–		(2)	36	(4)	37	–		–		–		–		14,800	20	1
WRIGLEY (WM. JR.) 345	1,011	35	13	15	106	16	22	14	11	2	21	1	31	6	13	13	21	22	53	11	5,750	34	5
AG PROCESSING 359	949	36	4	35	–		–		–		–		–		–		–		–		608	48	4
OCEAN SPRAY 366	873	37	14	13	–		–		–		–		–		–		–		–		2,200	43	13
UNIVERSAL FOODS 380	837	38	16	12	40	24	45	7	5	14	8	15	20	22	13	12	24	18	6	26	5,700	35	29
FLOWERS INDUSTRIES 389	789	39	7	30	30	27	(32)	28	4	18	7	22	14	27	10	18	28	11	2	28	9,200	25	1
SMITHFIELD FOODS 395	775	40	(15)	47	11	33	(38)	29	1	31	7	19	25	11	14	11	20	23	(23)	33	3,900	37	(5)
AMSTAR 399	766	41	(28)	48	38	25	–		5	13	7	18	37	5	–		–		–		2,000	45	(57)
TRI VALLEY GROWERS 406	747	42	12	18	–		–		–		–		–		–		–		–		3,018	39	8

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																					
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
		$ Mil.	Rank	% change from 1988	Rank	$ Mil.	Rank	% change from 1988	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1979-89 annual growth rate %	Rank	1979-89 annual average %	Rank	1989 %	Rank	Number	Rank	% change from 1988
	FINEVEST FOODS 422	701	43	10	21	(19)	35	(658)	35	(3)	37	(8)	38	(47)	36	–		–		6	25	2,750	41	(10)
	RICELAND FOODS 429	684	44	8	27	–		–		–		–		–		–		–		–		2,041	44	14
	IMPERIAL HOLLY 434	668	45	–		22	29	–		3	23	7	20	22	16	–		–		140	2	2,500	42	–
	PILGRIM'S PRIDE 438	663	46	31	4	20	30	–	1	3	24	7	21	23	14	–		–		15	19	7,800	28	15
	HUDSON FOODS 453	623	47	13	14	23	28	54	5	4	19	8	16	21	21	–		–		0	29	6,262	32	14
	THORN APPLE VALLEY 459	613	48	3	39	2	34	(57)	31	0	33	2	31	8	31	2	23	(3)	28	(10)	30	2,900	40	10
	PRAIRIE FARMS DAIRY 481	578	49	13	16	–		–		–		–		–		–		–		–		1,829	46	(9)
	SUN-DIAMOND GROWERS 486	572	50	3	38	–		–		–		–		–		–		–		–		2,500	42	–
	TOTAL	209,480		24		6,933		2		–		–		–		–		–		–		1,104,407		4
	MEDIAN	1,924		9		69		14		3		5		15		13		27		28		9,350		3
9	**FOREST PRODUCTS** 37 COMPANIES																							
	INTERNATIONAL PAPER 35	11,378	1	19	6	864	1	15	10	8	16	7	17	17	19	3	23	17	16	26	13	63,500	1	14
	GEORGIA-PACIFIC 41	10,171	2	7	22	661	2	42	3	6	20	9	9	24	3	9	13	10	26	35	8	44,000	3	–
	WEYERHAEUSER 42	10,106	3	1	35	341	6	(40)	33	3	33	2	34	8	34	(5)	27	7	27	15	18	45,214	2	(4)
	JAMES RIVER 81	5,902	4	16	8	255	11	22	5	4	30	5	30	11	31	12	8	19	11	1	26	36,000	5	(8)
	KIMBERLY-CLARK 86	5,777	5	7	20	424	4	12	13	7	18	9	12	20	9	5	22	28	4	31	11	39,664	4	3
	STONE CONTAINER 94	5,361	6	43	2	286	9	(16)	27	5	24	5	31	21	7	24	1	22	10	(23)	31	32,600	6	57
	CHAMPION INTERNATIONAL 97	5,254	7	2	31	432	3	(5)	18	8	15	6	25	12	28	(0)	26	6	28	3	24	29,600	7	(3)
	SCOTT PAPER 104	5,066	8	7	18	376	5	(6)	21	7	17	7	20	18	12	11	9	22	8	25	14	29,400	8	9
	MEAD 110	4,647	9	4	26	216	13	(39)	32	5	28	6	24	13	27	2	24	16	18	(4)	28	21,800	9	4
	BOISE CASCADE 112	4,338	10	6	25	268	10	(7)	22	6	22	6	21	17	18	5	21	13	23	11	20	19,539	10	(1)
	GREAT NORTH. NEKOOSA 122	3,863	11	8	16	321	7	(6)	20	8	14	8	15	18	13	12	6	24	7	61	1	19,500	11	(1)
	JEFFERSON SMURFIT 154	2,936	12	134	1	36	34	(75)	34	1	35	1	35	–		–		–		–		16,800	13	121
	UNION CAMP 161	2,761	13	4	27	299	8	1	17	11	6	9	11	17	17	8	15	15	19	11	19	18,646	12	1
	WESTVACO 193	2,287	14	7	19	233	12	16	9	10	7	8	14	16	24	10	11	17	15	8	22	14,960	15	1
	TEMPLE-INLAND 204	2,124	15	1	34	207	14	4	16	10	11	3	33	16	21	–		–		49	5	12,000	18	9
	LOUISIANA-PACIFIC 208	2,035	16	7	23	193	16	(36)	31	9	13	9	8	16	22	5	19	13	21	57	2	13,000	16	–
	WILLAMETTE INDUSTRIES 223	1,892	17	10	12	191	17	19	7	10	9	12	4	21	8	11	10	17	14	28	12	9,370	20	0
	AVERY INTERNATIONAL 233	1,732	18	10	13	87	24	11	14	5	27	8	16	16	23	13	5	25	6	45	7	11,715	19	2
	SONOCO PRODUCTS 244	1,656	19	4	29	104	22	8	15	6	21	10	6	20	10	15	4	28	3	10	21	15,049	14	1
	BOWATER 268	1,450	20	3	30	145	19	(12)	26	10	10	6	22	15	25	–		–		5	23	5,100	27	2
	ESSELTE BUSINESS SYS. 272	1,433	21	2	32	54	28	(8)	23	4	31	5	28	11	32	–		–		56	3	12,750	17	(2)
	FEDERAL PAPER BOARD 295	1,311	22	17	7	205	15	43	2	16	2	11	5	25	2	20	2	17	13	32	9	6,600	25	25
	POTLATCH 301	1,241	23	14	10	137	20	22	6	11	5	8	13	16	20	7	16	14	20	22	15	7,371	24	2
	FIRST BRANDS 309	1,207	24	29	4	61	27	–		5	26	7	19	50	1	–		–		–		3,359	33	(9)
	PENTAIR 317	1,164	25	41	3	36	33	(9)	25	3	34	5	29	12	29	5	20	19	12	(10)	30	8,500	21	(2)
	ITT RAYONIER 331	1,082	26	7	21	128	21	108	1	12	4	10	7	17	15	–		–		–		3,100	35	–
	BEMIS 333	1,077	27	1	36	47	30	19	8	4	29	7	18	18	14	9	12	31	1	51	4	7,524	22	(4)
	FORT HOWARD 336	1,054	28	(43)	37	(239)	37	–		(23)	37	–		–		–		–		–		3,000	36	–
	CONSOLIDATED PAPERS 353	978	29	9	14	168	18	12	12	17	1	15	2	20	11	12	7	26	5	31	10	4,563	29	2
	CHESAPEAKE 384	815	30	15	9	48	29	(9)	24	6	23	6	23	15	26	8	14	13	22	3	25	4,945	28	17
	DENNISON MFG. 394	777	31	8	17	29	35	(22)	29	4	32	5	26	11	30	0	25	13	24	(1)	27	7,500	23	(1)
	GAYLORD CONTAINER 407	746	32	11	11	39	32	(6)	19	5	25	4	32	22	6	–		–		(45)	32	4,100	30	5
	LONGVIEW FIBRE 421	701	33	7	24	67	26	(31)	30	9	12	9	10	17	16	6	18	12	25	(7)	29	3,500	31	1
	ST. JOE PAPER 436	663	34	2	33	67	25	(19)	28	10	8	5	27	9	33	–		–		–		5,500	26	(2)
	POPE & TALBOT 457	619	35	20	5	44	31	37	4	7	19	12	3	22	5	6	17	17	17	47	6	3,181	34	2
	GLATFELTER (P.H.) 458	613	36	8	15	93	23	13	11	15	3	17	1	24	4	16	3	29	2	17	17	3,447	32	0
	TAMBRANDS 476	583	37	4	28	2	36	(98)	35	0	36	0	36	1	35	(27)	28	22	9	22	16	4,100	30	(13)
	TOTAL	106,799		14		6,923		(3)		–		–		–		–		–		–		590,497		–
	MEDIAN	1,656		7		145		(5)		7		7		17		8		17		20		11,858		10
10	**FURNITURE** 9 COMPANIES																							
	JOHNSON CONTROLS 126	3,690	1	19	2	98	1	(6)	5	3	6	4	6	10	6	4	6	12	6	(9)	6	42,600	2	47
	INTERCO 138	3,278	2	(2)	8	70	2	(52)	7	2	7	4	7	–		(7)	7	(1)	7	(84)	7	46,900	1	(13)
	LEAR SIEGLER SEATING 340	1,015	3	–		(8)	8	–		(1)	8	(1)	8	(17)	7	–		–		–		5,510	7	–
	LEGGETT & PLATT 350	992	4	22	1	46	3	22	1	5	4	8	4	16	3	17	1	26	1	30	3	11,300	3	7
	MILLER (HERMAN) 386	799	5	12	5	45	4	0	3	6	2	9	3	17	2	15	2	23	3	2	4	5,187	8	2
	OHIO MATTRESS HLDG. 420	706	6	7	6	(25)	9	(174)	8	(3)	9	(2)	9	(55)	8	–		–		–		5,000	9	(10)
	HON INDUSTRIES 462	608	7	6	7	27	7	(22)	6	5	5	10	2	21	1	6	5	20	5	111	1	6,385	6	18

INDUSTRY TABLE NUMBER

RANKED WITHIN INDUSTRY BY 11 MEASURES

COMPANY 500 RANK	SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
	$ Mil.	Rank	% change from 1988	Rank	$ Mil.	Rank	% change from 1988	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1979-89 annual growth rate %	Rank	1979-89 annual average %	Rank	1989 %	Rank	Number	Rank	% change from 1988
KIMBALL INTERNATIONAL 470	597	8	13	4	34	5	(4)	4	6	1	10	1	14	5	8	4	22	4	31	2	8,351	4	1
LA-Z-BOY CHAIR 496	556	9	14	3	27	6	4	2	5	3	8	5	14	4	14	3	26	2	(4)	5	7,743	5	(3)
TOTAL	12,242		24		315		(48)		—		—		—		—		—		—		138,976		20
MEDIAN	799		12		34		(5)		5		8		14		8		22		2		7,743		2
11 INDUSTRIAL AND FARM EQUIPMENT 28 COMPANIES																							
TENNECO 26	14,439	1	(8)	26	584	1	(29)	16	4	12	3	14	17	5	(2)	11	12	9	34	6	90,000	1	(4)
CATERPILLAR 38	11,126	2	7	15	497	2	(19)	15	4	10	5	10	11	12	(1)	9	3	18	(7)	14	60,408	2	(0)
DEERE 66	7,221	3	35	4	380	3	21	4	5	4	4	11	14	10	0	8	8	13	31	7	38,949	3	2
DRESSER INDUSTRIES 119	4,023	4	2	18	170	5	8	10	4	11	6	8	11	13	(2)	10	9	12	56	3	31,400	7	2
CUMMINS ENGINE 132	3,511	5	6	16	(6)	23	—		0	23	0	23	(1)	21	—		9	11	(18)	21	25,100	8	(4)
INGERSOLL-RAND 134	3,447	6	14	7	211	4	30	3	6	2	8	2	15	6	3	6	15	7	51	4	31,623	6	4
BLACK & DECKER 141	3,221	7	41	2	30	17	(69)	19	1	19	0	20	4	19	(14)	18	1	22	(14)	18	38,600	4	86
PARKER HANNIFIN 177	2,520	8	12	9	124	7	17	8	5	5	6	6	15	7	4	4	11	10	(8)	15	33,463	5	0
BAKER HUGHES 191	2,328	9	1	20	85	8	(18)	14	4	14	4	12	8	15	(9)	15	3	19	87	1	20,400	10	(5)
DOVER 202	2,136	10	9	12	144	6	(1)	12	7	1	10	1	19	3	11	2	19	4	27	8	20,049	11	(2)
TRINOVA 217	1,942	11	1	19	32	16	(63)	18	2	18	2	18	5	18	(5)	12	16	6	(9)	16	21,597	9	(7)
TECUMSEH PRODUCTS 256	1,535	12	40	3	83	9	18	7	5	3	8	3	12	11	4	5	13	8	(2)	13	15,781	14	29
TIMKEN 258	1,533	13	(1)	22	55	13	(16)	13	4	15	4	13	5	17	(8)	14	5	17	(20)	23	17,248	12	(4)
HARNISCHFEGER IND. 262	1,483	14	25	5	71	10	389	1	5	7	5	9	14	9	—		5	16	21	10	12,000	15	3
CLARK EQUIPMENT 273	1,422	15	11	10	69	11	50	2	5	6	7	4	14	8	(7)	13	3	20	19	11	9,183	19	2
YORK HOLDINGS 278	1,409	16	14	8	(2)	22	—		0	22	0	22	—		—		—		—		10,100	18	2
FIGGIE INTERNATIONAL 289	1,333	17	11	11	63	12	2	11	5	8	6	7	20	2	5	3	25	1	(11)	17	17,000	13	(2)
NACCO INDUSTRIES 313	1,188	18	93	1	54	14	20	6	5	9	3	16	18	4	17	1	18	5	78	2	10,725	16	64
FUQUA INDUSTRIES 356	952	19	(4)	25	6	20	(93)	20	1	20	1	19	2	20	(13)	17	21	3	(16)	19	10,153	17	(32)
INTERLAKE 362	913	20	2	17	1	21	(98)	21	0	21	0	21	—		(30)	19	23	2	23	9	7,053	23	(10)
BRIGGS & STRATTON 364	877	21	(4)	24	(20)	25	(166)	22	(2)	25	(4)	25	(8)	22	—		6	15	(2)	12	7,316	22	(26)
CINCINNATI MILACRON 370	861	22	0	21	17	19	(53)	17	2	17	3	17	8	16	(12)	16	2	21	(18)	20	7,683	21	(8)
IMO INDUSTRIES 376	851	23	24	6	34	15	20	5	4	13	3	15	10	14	—		—		(18)	22	8,000	20	7
DRESSER-RAND 378	848	24	—		—		—		—		—		—		—		—		—		8,000	20	—
LINCOLN ELECTRIC 423	697	25	—		—		—		—		—		—		—		—		—		—		—
TORO 441	651	26	7	14	22	18	10	9	3	16	7	5	23	1	0	7	7	14	35	5	3,068	26	(1)
MARLEY 461	611	27	8	13	(11)	24	(290)	23	(2)	24	(3)	24	—		—		—		—		4,678	25	(3)
ALLIED PRODUCTS 492	565	28	(2)	23	(22)	26	(511)	24	(4)	26	(5)	26	(21)	23	—		(3)	23	(43)	24	5,102	24	(4)
TOTAL	73,644		1		2,671		(17)		—		—		—		—		—		—		564,680		(6)
MEDIAN	1,452		7		55		(9)		4		3		10		(2)		9		(2)		16,391		(1)
12 JEWELRY, SILVERWARE 1 COMPANY																							
JOSTENS 424	696	1	17	1	54	1	(39)	1	8	1	12	1	24	1	11	1	24	1	55	1	8,254	1	18
13 LEATHER N.A.																							
14 METAL PRODUCTS 16 COMPANIES																							
GILLETTE 124	3,850	1	7	8	285	1	8	7	7	6	9	6	373	1	11	6	28	4	51	3	30,400	2	3
MASCO 142	3,151	2	29	3	221	2	(23)	10	7	7	6	9	12	10	7	9	17	9	(1)	11	42,000	1	56
ILLINOIS TOOL WORKS 200	2,173	3	13	7	164	3	17	3	8	5	10	5	19	5	14	4	25	5	31	6	15,700	5	11
MCDERMOTT 205	2,121	4	7	9	8	16	(85)	14	0	16	0	16	1	16	—		—		—		23,000	3	10
STANLEY WORKS 212	1,981	5	4	14	118	4	14	4	6	9	8	7	17	9	7	10	15	12	41	5	18,464	4	(3)
CROWN CORK & SEAL 221	1,910	6	4	13	94	6	1	8	5	10	6	10	12	11	9	8	19	8	15	9	14,747	6	17
HARSCO 284	1,351	7	6	11	11	14	(83)	13	1	15	1	15	3	15	(13)	14	15	11	(4)	13	12,000	7	9
BALL 307	1,222	8	14	5	36	12	(29)	11	3	13	4	12	9	13	2	11	24	6	25	7	7,154	12	1
HILLENBRAND IND. 320	1,144	9	29	2	75	8	7	5	7	8	7	8	19	8	12	5	29	3	45	4	9,000	10	13
NEWELL 321	1,123	10	14	6	85	7	39	1	8	4	10	3	19	6	17	3	40	1	60	2	10,200	9	(7)
PHILIPS INDUSTRIES 360	945	11	36	1	46	11	7	6	5	11	10	4	19	7	20	2	37	2	25	8	10,385	8	22
SNAP-ON TOOLS 363	891	12	4	12	105	5	(8)	9	12	1	13	1	11	12	9	7	13	13	(4)	14	7,445	11	5
DANAHER 401	756	13	1	15	61	9	39	2	8	3	12	2	32	3	—		21	7	8	10	6,300	13	(3)
CAMERON IRON WORKS 456	620	14	24	4	20	13	—		3	12	3	14	6	14	(13)	13	—		—		5,862	15	6
BUTLER MANUFACTURING 477	582	15	(10)	16	10	15	(36)	12	2	14	4	11	23	4	(6)	12	8	14	(1)	12	3,644	16	(2)
BANNER INDUSTRIES 480	579	16	6	10	50	10	—		9	2	4	13	50	2	23	1	15	10	85	1	6,115	14	(24)
TOTAL	24,399		(13)		1,389		(89)		—		—		—		—		—		—		222,816		(3)
MEDIAN	1,183		7		68		3		6		7		18		9		20		25		10,293		5

BY INDUSTRY

RANKED WITHIN INDUSTRY BY 11 MEASURES

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	SALES $ Mil.	Rank	SALES % change from 1988	Rank	PROFITS $ Mil.	Rank	PROFITS % change from 1988	Rank	PROFITS AS % OF SALES %	Rank	PROFITS AS % OF ASSETS %	Rank	PROFITS AS % OF EQUITY %	Rank	EARNINGS PER SHARE 1979-89 annual growth rate %	Rank	TOTAL RETURN TO INVESTORS 1979-89 annual average %	Rank	TOTAL RETURN TO INVESTORS 1989 %	Rank	EMPLOYEES Number	Rank	EMPLOYEES % change from 1988
15	**METALS** 29 COMPANIES																							
	ALUMINUM CO. OF AMER. 37	11,162	1	14	8	945	1	10	13	8	10	8	11	18	13	4	9	15	8	40	4	60,600	1	3
	LTV 72	6,362	2	(15)	26	265	5	—		4	20	4	22	—		(10)	18	(17)	18	(50)	22	38,000	2	(13)
	REYNOLDS METALS 75	6,201	3	11	10	533	2	11	12	9	9	10	9	20	9	7	7	17	4	3	16	30,500	3	3
	BETHLEHEM STEEL 95	5,306	4	(3)	24	246	7	(39)	20	5	16	5	19	12	17	(7)	16	2	13	(20)	19	30,500	3	(7)
	INLAND STEEL IND. 117	4,147	5	2	18	120	12	(54)	23	3	22	4	23	8	22	(7)	15	4	12	(16)	18	20,715	4	0
	AMAX 120	3,915	6	(1)	19	360	3	(51)	22	9	7	9	10	18	14	(4)	13	(5)	16	4	14	20,000	5	—
	PHELPS DODGE 165	2,726	7	18	6	267	4	(36)	19	10	4	11	8	20	10	4	8	10	10	32	7	13,288	8	24
	NATIONAL STEEL 171	2,577	8	(1)	20	83	15	(6)	15	3	21	5	20	11	18	—		—		—		12,000	9	7
	ARMCO 178	2,494	9	(23)	27	165	10	13	11	7	11	7	13	16	15	(9)	17	(6)	17	10	12	10,500	10	(46)
	MAXXAM 184	2,423	10	367	1	117	13	569	1	5	15	4	24	50	2	15	2	16	6	93	1	8,300	13	(35)
	TYCO LABORATORIES 213	1,971	11	23	3	91	14	37	5	5	17	7	14	19	11	13	3	34	1	42	3	14,000	7	17
	PENN CENTRAL 226	1,833	12	19	5	174	9	68	3	9	5	5	18	10	20	12	5	15	7	15	11	15,100	6	(11)
	CYPRUS MINERALS 229	1,790	13	35	2	250	6	47	4	14	2	14	3	18	12	—		—		25	10	8,456	12	14
	HILLSBOROUGH 236	1,706	14	(32)	28	(185)	28	—		(11)	28	(5)	29	—		—		—		—		8,935	11	(31)
	CYCLOPS INDUSTRIES 286	1,347	15	8	14	36	22	27	6	3	23	7	12	43	3	—		—		37	6	6,800	16	(6)
	WEIRTON STEEL 288	1,338	16	(3)	25	16	25	(79)	25	1	26	2	26	5	24	—		—		—		7,980	15	6
	NUCOR 297	1,289	17	20	4	58	20	(47)	21	5	19	6	17	10	19	3	10	17	3	27	8	5,400	20	8
	WHEELING-PITTSBURGH 310	1,203	18	9	13	179	8	(31)	18	15	1	12	4	116	1	11	6	(4)	15	27	9	6,330	18	2
	ALLEGHENY LUDLUM 315	1,180	19	(2)	23	134	11	23	8	11	3	17	1	41	4	—		—		39	5	5,500	19	(2)
	ESSEX GROUP 335	1,056	20	—		27	24	—		3	24	6	16	26	6	—		—		—		3,603	24	—
	AMSTED INDUSTRIES 341	1,014	21	6	17	65	17	475	2	6	13	11	6	37	5	1	11	—		—		8,072	14	(7)
	WORTHINGTON IND. 346	1,006	22	11	11	64	18	14	10	6	14	12	5	20	8	12	4	17	5	3	15	6,500	17	7
	J&L SPECIALTY 377	849	23	10	12	79	16	(28)	17	9	6	14	2	—		—		—		—		1,310	28	0
	TEXAS INDUSTRIES 413	717	24	13	9	4	27	(71)	24	1	27	1	27	1	25	(26)	19	7	11	(27)	21	3,000	26	(6)
	LONE STAR TECH. 432	675	25	(2)	21	(191)	29	—		(28)	29	(5)	28	(179)	26	—		—		(74)	23	1,986	27	(32)
	MAGMA COPPER 440	653	26	8	15	58	19	4	14	9	8	6	15	13	16	—		—		(27)	20	4,201	22	1
	HANDY & HARMAN 442	646	27	(2)	22	8	26	(20)	16	1	25	2	25	7	23	(6)	14	2	14	(3)	17	5,022	21	(18)
	LUKENS 443	645	28	7	16	41	21	24	7	6	12	11	7	20	7	17	1	21	2	47	2	3,878	23	1
	CARPENTER TECHNOLOGY 448	634	29	14	7	29	23	19	9	5	18	4	21	9	21	(4)	12	10	9	7	13	3,542	25	(9)
	TOTAL	68,845		13		4,037		183		—		—		—		—		—		—		384,018		—
	MEDIAN	1,347		8		83		10		5		6		16		3		10		10		8,026		(0)
16	**MINING, CRUDE-OIL PRODUCTION** 11 COMPANIES																							
	ASARCO 196	2,240	1	13	2	231	1	12	4	10	5	9	4	16	4	(4)	5	(0)	6	15	10	9,000	1	6
	FREEPORT-MCMORAN 210	2,015	2	4	6	131	5	(58)	8	6	7	4	7	33	2	2	3	9	3	26	9	7,310	2	13
	ORYX ENERGY 303	1,237	3	(4)	11	139	3	—		11	4	3	9	9	7	—		—		77	3	2,900	4	(9)
	UNION TEXAS 318	1,160	4	2	9	173	2	58	3	15	2	10	2	48	1	—		—		77	2	1,927	8	4
	VULCAN MATERIALS 334	1,076	5	2	8	131	4	(4)	6	12	3	13	1	20	3	9	2	23	1	11	11	6,250	3	(1)
	LOUISIANA LAND & EXP. 404	752	6	4	5	44	8	—		6	8	4	6	11	6	(10)	7	5	5	42	8	685	11	10
	NERCO 415	713	7	8	3	68	7	2	5	10	6	5	5	13	5	—		—		66	4	2,266	7	(4)
	MAXUS ENERGY 463	608	8	6	4	(31)	11	—		(5)	11	(2)	11	—		—		(2)	8	60	5	1,891	9	(5)
	WESTMORELAND COAL 485	605	9	2	10	11	10	662	1	2	10	3	8	8	8	18	1	(1)	7	52	6	1,295	10	(18)
	NEWMONT MINING 467	603	10	21	1	126	6	(28)	7	21	1	10	3	—		(6)	6	17	2	46	7	2,684	5	(5)
	MITCHELL ENERGY 482	577	11	3	7	22	9	146	2	4	9	1	10	4	9	(4)	4	8	4	97	1	2,300	6	2
	TOTAL	11,594		32		1,044		162		—		—		—		—		—		—		38,506		22
	MEDIAN	752		4		126		7		10		4		11		(4)		7		52		2,300		(1)
17	**MOTOR VEHICLES AND PARTS** 23 COMPANIES																							
	GENERAL MOTORS 1	126,974	1	5	10	4,224	1	(13)	8	3	10	2	13	12	8	2	7	12	10	8	4	775,100	1	1
	FORD MOTOR 2	96,933	2	5	11	3,835	2	(28)	11	4	8	2	15	17	5	14	1	25	1	(8)	9	366,641	2	2
	CHRYSLER 8	36,156	3	2	14	359	3	(66)	16	1	17	1	17	5	14	—		23	2	(23)	13	121,947	3	(16)
	DANA 99	5,157	4	(0)	17	132	6	(19)	9	3	13	3	12	13	7	(0)	9	13	9	(7)	8	37,500	5	(5)
	NAVISTAR INT'L 113	4,296	5	5	9	87	8	(64)	15	2	15	2	14	10	11	(33)	12	(20)	14	(28)	15	14,237	9	(9)
	EATON 115	4,249	6	0	16	225	5	6	7	5	5	7	7	20	3	4	6	17	5	6	5	43,048	4	(3)
	PACCAR 136	3,373	7	8	7	242	4	38	5	7	4	8	5	24	1	8	4	17	4	10	3	13,077	11	(5)
	MACK TRUCKS 215	1,958	8	(7)	21	(185)	23	(683)	20	(9)	23	(11)	23	(54)	18	—		—		(54)	18	7,870	18	(16)
	MASCO INDUSTRIES 239	1,687	9	2	13	57	11	(31)	14	3	9	3	11	15	6	—		—		(28)	16	14,300	8	(4)
	FLEETWOOD ENTERPRISES 249	1,632	10	16	4	70	10	46	3	4	7	10	4	18	4	12	2	21	3	(2)	7	12,000	13	14
	COLT INDUSTRIES 250	1,618	11	(2)	18	119	7	31	6	7	2	13	2	—		—		—		—		13,300	10	(13)

INDUSTRY TABLE NUMBER

COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																					
	SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES	
	$ Mil.	Rank	% change from 1988	Rank	$ Mil.	Rank	% change from 1988	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1979-89 annual growth rate %	Rank	1979-89 annual average %	Rank	1989 %	Rank	Number	Rank	% change from 1988
ARVIN INDUSTRIES 251	1,617	12	18	2	18	17	419	1	1	16	2	16	5	13	(8)	11	16	7	(16)	12	17,800	6	6
ECHLIN 266	1,468	13	13	5	44	13	(28)	12	3	11	4	8	7	12	1	8	11	11	(1)	6	16,200	7	10
FEDERAL-MOGUL 330	1,086	14	(8)	22	29	14	(30)	13	3	12	4	9	10	10	(3)	10	15	8	(8)	10	12,006	12	(11)
SMITH (A.O.) 339	1,024	15	(4)	19	(10)	19	(150)	17	(1)	19	(1)	19	(4)	15	–		5	12	(13)	11	9,900	14	(14)
TEREX 369	863	16	151	1	19	16	42	4	2	14	3	10	23	2	–		–		73	1	9,400	15	500
SPX 397	773	17	(12)	23	81	9	81	2	11	1	14	1	(54)	17	10	3	16	6	12	2	5,000	22	(44)
INSILCO 398	766	18	2	15	(43)	22	–		(6)	22	(4)	21	(97)	20	–		–		–		7,324	19	–
HARVARD INDUSTRIES 400	758	19	11	6	(20)	21	(245)	19	(3)	21	(4)	20	(64)	19	–		–		–		8,500	16	4
INT'L CONTROLS 408	743	20	6	8	3	18	–		0	18	1	18	–		–		–		–		4,100	23	26
EAGLE-PICHER IND. 410	734	21	(5)	20	54	12	–		7	3	11	3	–		5	5	(4)	13	(41)	17	8,200	17	(9)
SUDBURY 450	627	22	18	3	(16)	20	(238)	18	(2)	20	(4)	22	(25)	16	–		–		(24)	14	5,400	21	(7)
UIS 485	573	23	2	12	28	15	(22)	10	5	6	8	6	10	9	–		–		–		6,000	20	(2)
TOTAL	295,064		3		9,353		(24)		–		–		–		–		–		–		1,528,850		(5)
MEDIAN	1,617		2		54		(25)		3		3		7		3		15		(8)		12,006		(4)
18 PETROLEUM REFINING 27 COMPANIES																						
EXXON 3	86,656	1	9	19	3,510	1	(33)	17	4	10	4	13	12	9	1	5	22	1	19	21	104,000	1	3
MOBIL 6	50,976	2	6	21	1,809	4	(13)	14	4	13	5	11	11	12	(1)	9	16	5	44	12	67,900	2	(2)
TEXACO 10	32,416	3	(3)	24	2,413	2	85	3	7	3	9	2	26	4	3	3	17	2	42	14	37,067	7	(7)
CHEVRON 11	29,443	4	17	8	251	10	(86)	24	1	25	1	25	2	25	(18)	18	16	6	55	5	54,826	3	2
AMOCO 12	24,214	5	14	12	1,610	5	(22)	16	7	4	5	7	12	8	2	4	17	4	52	7	53,648	4	0
SHELL OIL 13	21,703	6	3	23	1,405	6	13	9	6	5	5	8	9	16	–		–		–		31,338	8	(3)
USX 19	17,755	7	12	15	965	7	28	6	5	7	6	6	17	6	–		13	11	27	19	53,610	5	(9)
ATLANTIC RICHFIELD 22	15,905	8	(10)	26	1,953	3	23	7	12	1	9	3	30	1	9	1	17	3	45	11	26,600	9	(2)
PHILLIPS PETROLEUM 30	12,492	9	11	18	219	11	(66)	23	2	19	2	20	10	14	(7)	13	12	14	35	16	21,800	10	4
UNOCAL 40	10,417	10	18	7	260	9	(46)	19	2	17	3	16	11	10	(3)	10	14	8	61	3	17,286	12	(5)
SUN 46	9,927	11	15	11	98	18	–	1	1	24	1	24	3	24	(17)	17	14	10	33	17	21,600	11	1
COASTAL 54	8,686	12	6	20	170	12	8	10	2	18	2	21	9	15	–		14	9	46	10	13,232	13	(30)
ASHLAND OIL 58	8,017	13	3	22	86	19	(62)	22	1	23	2	22	8	19	(15)	15	13	12	22	20	37,800	6	1
AMERADA HESS 89	5,589	14	33	1	476	8	283	2	9	2	7	5	19	5	0	8	10	16	57	4	8,740	15	7
CITGO PETROLEUM 105	4,941	15	20	6	161	13	(3)	12	3	14	10	1	27	3	–		–		–		3,300	23	–
KERR-MCGEE 144	3,122	16	14	14	156	14	42	4	5	8	5	10	11	13	0	6	8	17	38	15	7,942	16	2
AMERICAN PETROFINA 148	3,058	17	16	9	119	15	(10)	13	4	11	5	9	11	11	0	7	11	15	13	22	3,347	22	(7)
PENNZOIL 163	2,750	18	32	2	104	17	(93)	25	4	12	2	19	7	21	(6)	11	15	7	28	18	10,700	14	7
DIAMOND SHAMROCK 206	2,091	19	16	10	28	23	(47)	20	1	22	3	17	8	17	–		–		67	2	4,800	20	20
MAPCO 209	2,019	20	12	16	116	16	(1)	11	6	6	8	4	29	2	5	2	12	13	50	8	5,994	17	19
MURPHY OIL 241	1,684	21	14	13	47	20	20	8	3	16	2	18	6	22	(7)	12	7	18	43	13	4,538	21	5
TOSCO 270	1,441	22	26	3	40	22	(55)	21	3	15	4	12	15	7	(21)	19	(14)	22	48	9	1,680	26	98
CROWN CENTRAL 279	1,403	23	22	5	21	24	(45)	18	1	20	3	15	7	20	(15)	16	(1)	20	54	6	5,745	18	5
VALERO ENERGY 361	941	24	22	4	42	21	36	5	4	9	4	14	8	18	–		–		72	1	1,816	24	(7)
QUAKER STATE 383	819	25	(6)	25	12	25	(21)	15	1	21	2	23	4	23	(12)	14	4	19	(10)	23	5,628	19	5
TESORO PETROLEUM 396	773	26	(31)	27	(31)	26	(258)	26	(4)	26	(7)	26	(29)	26	–		(5)	21	(22)	24	1,800	25	–
NAT'L COOP. REFINERY 437	663	27	11	17	–		–		–		–		–		–		–		–		560	27	(1)
TOTAL	359,900		8		16,040		(20)		–		–		–		–		–		–		607,297		(2)
MEDIAN	5,589		14		159		(12)		3		4		10		(3)		13		44		10,700		1
19 PHARMACEUTICALS 12 COMPANIES																						
JOHNSON & JOHNSON 47	9,844	1	9	8	1,062	3	11	9	11	8	14	7	26	6	13	5	19	11	43	5	83,100	1	2
BRISTOL-MYERS SQUIBB 50	9,422	2	58	1	747	6	(10)	10	8	10	9	9	15	11	5	11	24	4	29	10	54,100	2	54
AMERICAN HOME PRODUCTS 68	6,747	3	23	3	1,102	2	18	7	16	4	19	3	56	1	11	7	20	9	34	9	50,816	3	13
MERCK 70	6,698	4	13	5	1,495	1	24	3	22	3	22	2	42	2	16	3	24	3	38	7	34,400	6	7
PFIZER 80	5,904	5	10	7	681	7	(14)	11	12	7	8	10	15	10	10	8	17	12	24	11	42,100	4	3
ABBOTT LABORATORIES 90	5,454	6	10	6	860	5	14	8	16	5	18	4	32	5	18	2	24	5	45	4	40,929	5	6
WARNER-LAMBERT 114	4,272	7	9	9	413	9	21	5	10	9	14	6	37	4	15	4	24	2	51	3	33,000	7	–
LILLY (ELI) 116	4,176	8	3	12	940	4	23	4	22	2	16	5	25	7	11	6	21	8	64	1	28,200	8	6
SCHERING-PLOUGH 139	3,243	9	9	10	471	8	21	6	15	6	13	8	24	8	7	10	23	6	55	2	21,300	9	(5)
UPJOHN 156	2,916	10	6	11	176	11	(50)	12	6	12	5	11	10	12	1	12	21	7	38	6	20,100	10	(6)
RORER GROUP 311	1,198	11	15	4	86	12	40	2	7	11	5	12	18	9	9	9	19	10	12	12	8,527	11	2
MARION LABORATORIES 354	989	12	29	2	227	10	52	1	23	1	29	1	40	3	41	1	44	1	36	8	3,418	12	(1)
TOTAL	60,843		–		8,281		–		–		–		–		–		–		–		419,990		(8)
MEDIAN	4,863		10		714		20		13		14		26		11		22		38		33,700		3

INDUSTRY TABLE NUMBER	COMPANY 500 RANK	RANKED WITHIN INDUSTRY BY 11 MEASURES																					
		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
		$ Mil.	Rank	% change from 1988	Rank	$ Mil.	Rank	% change from 1988	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1979-89 annual growth rate %	Rank	1979-89 annual average %	Rank	1989 %	Rank	Number	Rank	% change from 1988
20 PUBLISHING, PRINTING 24 COMPANIES																							
	TIME WARNER 59	7,642	1	70	1	(256)	24	(188)	22	(3)	24	(1)	24	(4)	23	–		22	10	14	14	35,000	1	67
	GANNETT 130	3,523	2	6	14	398	2	9	11	11	6	11	7	20	8	10	10	19	16	25	9	32,900	2	(11)
	TIMES MIRROR 131	3,517	3	8	11	298	4	(10)	17	8	9	8	13	16	12	8	11	18	18	12	15	29,044	3	4
	DONNELLY (R.R.) 143	3,128	4	9	9	222	8	8	12	7	11	9	9	15	13	13	9	25	7	51	3	26,100	4	7
	BERKSHIRE HATHAWAY 179	2,484	5	25	2	447	1	12	10	18	2	5	18	9	17	25	1	39	2	85	1	20,000	7	–
	TRIBUNE 182	2,455	6	5	17	242	7	15	9	10	8	8	12	22	6	–		–		24	10	14,700	9	1
	KNIGHT-RIDDER 189	2,343	7	7	13	247	6	58	3	11	7	12	6	27	2	13	8	19	15	32	8	21,000	5	(5)
	READER'S DIGEST 225	1,871	8	9	8	152	11	7	13	8	10	13	3	34	1	–		–		–		7,400	15	–
	NEW YORK TIMES 227	1,807	9	3	19	267	5	59	2	15	3	12	4	25	3	21	4	24	8	0	18	10,600	12	(1)
	MCGRAW-HILL 230	1,789	10	(2)	22	48	14	(74)	21	3	23	2	23	5	22	(4)	18	19	17	(6)	20	14,461	10	(11)
	DOW JONES 235	1,715	11	7	12	317	3	39	5	18	1	12	5	23	5	19	6	20	13	15	13	9,818	13	8
	HARCOURT BRACE 237	1,702	12	(4)	23	72	13	–		4	18	3	21	–		(15)	19	21	12	(49)	23	6,400	17	(57)
	WASHINGTON POST 269	1,444	13	6	16	198	9	(26)	18	14	4	13	2	21	7	23	2	31	3	35	7	6,200	19	(2)
	DELUXE 293	1,321	14	10	7	153	10	6	14	12	5	18	1	24	4	16	7	27	5	42	5	16,948	8	2
	AMERICAN GREETINGS 296	1,275	15	9	10	44	15	33	7	3	20	4	19	8	21	5	14	23	9	74	2	20,500	6	(7)
	SCRIPPS (E.W.) 298	1,266	16	4	18	89	12	27	8	7	12	6	15	14	14	–		–		42	4	11,500	11	1
	MEREDITH 387	793	17	17	3	33	19	(30)	19	4	19	5	17	9	18	7	12	22	11	17	11	4,118	21	7
	STANDARD REGISTER 418	709	18	6	15	40	16	6	15	6	14	9	10	13	15	23	3	26	6	1	17	6,321	18	(1)
	COMM. CLEARING HOUSE 425	692	19	13	5	34	17	(31)	20	5	16	6	14	16	11	6	13	16	19	(7)	21	7,782	14	8
	MEDIA GENERAL 464	606	20	(20)	24	45	22	135	1	3	21	3	22	8	20	(1)	17	19	14	(8)	22	6,900	16	(13)
	REYNOLDS & REYNOLDS 466	605	21	1	21	27	21	4	16	5	17	6	16	12	16	5	15	9	20	4	16	5,035	20	1
	BANTA 474	589	22	12	6	34	18	45	4	6	13	9	11	17	10	21	5	27	4	0	19	3,796	22	3
	WESTERN PUBL. GRP. 498	551	23	16	4	30	20	38	6	5	15	10	8	18	9	–		–		15	12	3,500	23	–
	AFFILIATED PUB. 500	543	24	2	20	16	23	–		3	22	4	20	8	19	2	16	44	1	35	6	3,064	24	1
	TOTAL	44,370		23		3,173		–		–		–		–		–		–		–		323,087		17
	MEDIAN	1,573		7		81		9		6		8		16		10		22		15		10,209		1
21 RUBBER AND PLASTICS PRODUCTS 10 COMPANIES																							
	GOODYEAR TIRE 39	11,045	1	2	7	207	1	(41)	7	2	9	2	9	10	7	6	5	19	5	(12)	7	111,469	1	(2)
	PREMARK INT'L 170	2,601	2	8	4	78	3	(26)	6	3	7	4	7	10	6	–		–		0	4	24,700	2	3
	UNIROYAL GOODRICH 195	2,267	3	3	6	–		–		–		–		–		–		–		–		18,500	3	–
	RUBBERMAID 285	1,349	4	13	2	116	2	17	3	9	1	13	1	19	1	16	3	29	4	48	1	8,409	5	6
	RAYCHEM 326	1,104	5	1	8	36	5	(71)	8	3	6	3	8	5	9	(1)	7	7	7	(8)	6	11,451	4	5
	COOPER TIRE & RUBBER 367	870	6	16	1	58	4	42	2	7	2	11	3	19	2	24	1	39	1	36	2	6,041	7	0
	TREDEGAR IND. 445	638	7	–		17	9	–		3	8	5	6	9	8	–		–		–		5,000	8	–
	SCHULMAN (A.) 451	626	8	5	5	31	6	11	4	5	4	12	2	18	3	15	4	35	2	28	3	1,260	10	5
	STANDARD PRODUCTS 494	560	9	10	3	29	7	(16)	5	5	3	9	4	18	4	19	2	32	3	(22)	8	7,100	6	22
	CARLISLE 495	558	10	(2)	9	27	8	55	1	5	5	8	5	13	5	5	6	14	6	(3)	5	4,548	9	8
	TOTAL	21,616		(5)		600		(31)		–		–		–		–		–		–		198,478		(9)
	MEDIAN	987		5		36		(2)		4		6		11		15		29		(2)		7,755		5
22 SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT 17 COMPANIES																							
	EASTMAN KODAK 18	18,398	1	8	8	529	3	(62)	11	3	13	2	13	8	13	(5)	12	12	9	(5)	11	137,750	1	(5)
	XEROX 21	17,635	2	7	10	704	2	81	1	4	12	2	12	13	10	0	11	5	12	3	9	111,400	2	(2)
	MINNESOTA MINING 32	11,990	3	13	6	1,244	1	8	7	10	3	13	2	23	3	7	9	17	2	33	5	87,600	3	6
	BAXTER INTERNATIONAL 63	7,399	4	8	9	446	4	15	5	6	8	5	9	11	12	6	10	10	10	46	4	64,300	4	0
	POLAROID 218	1,942	5	4	12	145	6	–		7	7	8	6	97	1	14	4	16	6	26	6	11,441	9	(1)
	BECTON DICKINSON 220	1,921	6	4	13	214	5	32	2	11	2	9	5	20	6	14	3	16	3	21	7	18,800	6	(9)
	EG&G 245	1,655	7	18	4	70	9	2	8	4	9	11	4	20	5	12	5	12	8	21	8	31,000	5	24
	TEKTRONIX 271	1,439	8	2	16	19	14	–		1	14	2	14	4	14	(11)	13	(3)	15	(10)	13	15,708	7	(2)
	BAUSCH & LOMB 305	1,231	9	26	2	114	7	17	4	9	4	8	8	16	8	8	8	16	4	53	2	12,500	8	25
	PERKIN-ELMER 324	1,105	10	(23)	17	(24)	16	(134)	12	(2)	16	(2)	16	(4)	16	–		3	13	(6)	12	6,585	13	(40)
	BARD (C.R.) 393	778	11	3	15	65	10	(17)	10	8	5	12	3	20	7	18	1	28	1	(2)	10	8,300	10	1
	MEDTRONIC 405	747	12	14	5	97	8	13	6	13	1	13	1	21	4	17	2	16	5	71	1	6,303	15	7
	ANACOMP 416	710	13	55	1	(171)	17	(512)	14	(24)	17	(22)	17	–		–		(9)	16	(37)	16	6,370	14	(22)
	MILLIPORE 439	661	14	6	11	53	11	(3)	9	8	6	8	7	13	9	8	7	7	11	(22)	14	5,868	16	1
	BELL & HOWELL 454	623	15	4	14	25	12	–		4	11	4	11	30	2	–		–		–		6,800	11	–
	FOXBORO 469	598	16	11	7	(5)	15	(147)	13	(1)	15	(1)	15	(3)	15	–		1	14	(25)	15	6,700	12	(7)

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		SALES				PROFITS				PROFITS AS % OF						EARNINGS PER SHARE		TOTAL RETURN TO INVESTORS				EMPLOYEES		
		$ Mil.	Rank	% change from 1988	Rank	$ Mil.	Rank	% change from 1988	Rank	SALES %	Rank	ASSETS %	Rank	EQUITY %	Rank	1979-89 annual growth rate %	Rank	1979-89 annual average %	Rank	1989 %	Rank	Number	Rank	% change from 1988
	THERMO ELECTRON 472	594	17	19	3	25	13	22	3	4	10	4	10	12	11	11	6	15	7	51	3	4,965	17	8
	TOTAL	69,425		(2)		3,551		(6)		–		–		–		–		–		–		542,390		(8)
	MEDIAN	1,231		8		70		5		4		5		13		8		12		12		11,441		(1)
23	**SOAPS, COSMETICS** 11 COMPANIES																							
	PROCTER & GAMBLE 14	21,689	1	12	7	1,206	1	18	2	6	4	7	7	19	5	7	7	19	6	66	2	79,300	1	3
	UNILEVER U.S. 56	8,114	2	17	6	139	3	4	7	2	9	1	10	6	10	–		–		–		30,567	2	27
	COLGATE-PALMOLIVE 103	5,110	3	(7)	11	280	2	(12)	9	5	5	8	5	25	2	11	4	22	5	39	6	24,100	4	(2)
	AVON PRODUCTS 135	3,396	4	1	10	55	6	–		2	10	3	9	24	3	(22)	9	7	9	95	1	28,400	3	–
	REVLON GROUP 164	2,739	5	11	8	–		–		–		–		–		–		–		–		–		–
	CLOROX 265	1,471	6	17	5	124	5	(6)	8	8	2	10	3	16	8	11	5	29	4	40	5	5,300	7	10
	INT'L FLAVORS 368	870	7	4	9	139	4	8	6	16	1	14	1	18	7	8	6	17	7	42	4	4,217	8	1
	ALBERTO-CULVER 412	717	8	19	4	29	8	9	4	4	7	8	4	18	6	17	2	35	1	22	8	5,600	6	14
	HELENE CURTIS IND. 449	629	9	29	1	14	10	33	1	2	8	4	8	11	9	22	1	31	3	29	7	2,900	10	7
	CHEMED 471	594	10	19	3	26	9	9	5	4	6	8	6	22	4	7	8	13	8	15	9	5,721	5	3
	STANHOME 483	577	11	20	2	45	7	10	3	8	3	13	2	26	1	13	3	31	2	45	3	4,000	9	–
	TOTAL	45,907		11		2,057		46		–		–		–		–		–		–		190,105		5
	MEDIAN	1,471		17		90		9		4		8		18		11		22		40		5,661		5
24	**TEXTILES** 14 COMPANIES																							
	WICKES 107	4,802	1	–		(123)	14	–		(3)	13	(3)	13	(11)	12	–		–		–		38,000	1	–
	ARMSTRONG WORLD IND. 158	2,864	2	7	6	188	1	15	6	7	1	9	1	19	3	12	2	21	3	9	5	25,607	3	(1)
	WEST POINT-PEPPERELL 172	2,568	3	19	3	(19)	11	(123)	11	(1)	11	(1)	11	(1)	11	–		–		–		–		–
	BURLINGTON HOLDINGS 199	2,198	4	(10)	12	(23)	12	–		(1)	12	(1)	12	–		–		–		–		27,500	2	(2)
	SPRINGS INDUSTRIES 222	1,909	5	5	7	65	2	23	4	3	6	5	5	11	6	6	3	20	4	25	3	23,600	4	1
	AMOSKEAG 280	1,402	6	2	9	7	9	96	2	0	9	1	9	2	9	–		–		–		20,908	5	–
	DWG 314	1,185	7	1	10	(1)	10	(102)	10	0	10	0	10	(1)	10	–		22	2	71	1	17,300	6	1
	SHAW INDUSTRIES 316	1,176	8	23	2	48	3	41	3	4	5	9	3	26	1	24	1	39	1	34	2	10,700	7	3
	JPS TEXTILE GROUP 382	821	9	–		(57)	13	–		(7)	14	(9)	14	–		–		–		–		8,800	9	–
	CONE MILLS 414	715	10	4	8	12	7	115	1	2	8	3	8	9	7	–		–		–		8,900	8	–
	GUILFORD MILLS 455	632	11	8	5	26	5	(2)	8	4	3	6	4	13	5	(2)	5	17	5	(9)	7	4,426	13	11
	INTERFACE 478	582	12	47	1	25	6	22	5	4	4	5	6	16	4	–		–		19	4	4,550	12	–
	DIXIE YARNS 487	571	13	(6)	11	12	8	(45)	9	2	7	3	7	6	8	5	4	–		(16)	8	7,700	11	–
	DELTA WOODSIDE IND. 488	569	14	17	4	30	4	10	7	5	2	9	2	24	2	–		–		9	6	8,300	10	17
	TOTAL	21,984		46		189		(55)		–		–		–		–		–		–		206,291		4
	MEDIAN	1,180		6		12		15		2		3		8		6		21		14		10,700		1
25	**TOBACCO** 6 COMPANIES																							
	AMERICAN BRANDS 84	7,265	1	(3)	6	631	1	9	3	9	3	6	3	21	3	8	4	23	3	12	3	47,300	1	(3)
	UNIVERSAL 155	2,920	2	21	3	54	4	(11)	5	2	5	5	4	14	5	9	3	20	4	12	4	20,000	2	–
	LORILLARD 264	1,475	3	5	5	399	2	3	4	27	2	41	1	97	1	–		–		–		4,100	3	(4)
	STANDARD COMMERCIAL 357	951	4	27	1	2	6	(91)	6	0	6	0	6	1	6	(14)	5	17	5	(22)	5	1,600	6	(75)
	DIBRELL BROTHERS 427	689	5	24	2	15	5	15	2	2	4	5	5	19	4	17	2	34	1	32	2	2,730	5	(89)
	UST 433	670	6	10	4	190	3	17	1	28	1	30	2	30	2	18	1	33	2	55	1	3,337	4	(2)
	TOTAL	13,971		(64)		1,290		(64)		–		–		–		–		–		–		79,067		(70)
	MEDIAN	1,213		16		122		9		5		5		20		9		23		12		3,719		(4)
26	**TOYS, SPORTING GOODS** 2 COMPANIES																							
	HASBRO 277	1,410	1	5	2	92	1	27	2	7	1	7	2	11	2	34	1	51	1	21	2	8,200	2	–
	MATTEL 302	1,237	2	25	1	89	2	91	1	6	2	8	1	22	1	0	2	11	2	108	1	11,183	1	4
	TOTAL	2,647		14		181		49		–		–		–		–		–		–		19,383		2
27	**TRANSPORTATION EQUIPMENT** 5 COMPANIES																							
	BRUNSWICK 159	2,826	1	(14)	5	(71)	5	(137)	5	(3)	5	(4)	5	(9)	5	–		28	1	(14)	5	25,800	1	(9)
	OUTBOARD MARINE 242	1,678	2	5	4	70	1	(9)	3	4	1	6	2	11	3	14	1	16	2	(14)	4	13,418	2	4
	TRINITY INDUSTRIES 347	1,002	3	58	1	30	3	130	1	3	3	3	3	13	2	(4)	2	12	3	(10)	3	9,560	3	41
	HARLEY-DAVIDSON 381	831	4	10	3	33	2	30	2	4	2	9	1	21	1	–		–		55	1	5,000	5	2
	AVONDALE INDUSTRIES 419	708	5	20	2	2	4	(90)	4	0	4	0	4	1	4	–		–		(10)	2	8,500	4	(14)
	TOTAL	7,046		(12)		64		(82)		3		3		11		–		–		–		62,278		–
	MEDIAN	1,002		10		30		(9)		3		3		11		5		16		(10)		9,560		3

INDUSTRY MEDIANS

RETURN ON SALES

	1989	1988
PHARMACEUTICALS	13.0%	13.5%
MINING, CRUDE-OIL PRODUCTION	9.6	3.3
BEVERAGES	8.1	8.0
FOREST PRODUCTS	7.1	8.7
PUBLISHING, PRINTING	6.5	7.1
METAL PRODUCTS	6.2	4.6
CHEMICALS	6.1	6.9
COMPUTERS (INCL. OFFICE EQUIP.)	5.9	6.2
TOBACCO	5.4	7.8
METALS	4.8	6.2
FURNITURE	4.5	5.6
APPAREL	4.4	4.3
SOAPS, COSMETICS	4.4	5.3
SCIENTIFIC AND PHOTO. EQUIP.	4.2	5.0
ELECTRONICS	4.2	5.1
RUBBER AND PLASTICS PROD.	4.1	4.4
INDUSTRIAL AND FARM EQUIP.	3.6	4.3
AEROSPACE	3.3	3.6
PETROLEUM REFINING	3.3	4.7
TRANSPORTATION EQUIPMENT	3.0	3.1
MOTOR VEHICLES AND PARTS	2.7	3.5
FOOD	2.6	2.8
BUILDING MATERIALS	2.2	4.5
TEXTILES	1.9	3.5
THE 500 MEDIAN	4.7	5.5

RETURN ON ASSETS

	1989	1988
PHARMACEUTICALS	14.0%	13.1%
FURNITURE	7.9	8.8
SOAPS, COSMETICS	7.8	8.9
PUBLISHING, PRINTING	7.7	7.3
FOREST PRODUCTS	7.3	8.4
BEVERAGES	6.8	6.8
METAL PRODUCTS	6.7	5.8
APPAREL	6.7	6.1
CHEMICALS	6.5	7.5
RUBBER AND PLASTICS PROD.	6.3	6.4
METALS	6.1	8.2
TOBACCO	5.3	6.0
SCIENTIFIC AND PHOTO. EQUIP.	5.2	4.9
FOOD	5.2	6.7
ELECTRONICS	5.2	6.1
COMPUTERS (INCL. OFFICE EQUIP.)	5.0	5.6
PETROLEUM REFINING	4.1	5.3
MINING, CRUDE-OIL PRODUCTION	3.7	1.3
AEROSPACE	3.7	4.9
TRANSPORTATION EQUIPMENT	3.5	5.4
INDUSTRIAL AND FARM EQUIP.	3.3	5.4
TEXTILES	3.0	4.7
BUILDING MATERIALS	2.7	4.9
MOTOR VEHICLES AND PARTS	2.5	3.9
THE 500 MEDIAN	5.9	6.8

RETURN ON STOCKHOLDERS' EQUITY

	1989	1988
PHARMACEUTICALS	25.5%	23.6%
BEVERAGES	23.2	22.8
TOBACCO	20.1	22.5
SOAPS, COSMETICS	18.4	18.5
METAL PRODUCTS	16.0	12.7
APPAREL	17.5	17.5
FOREST PRODUCTS	16.8	19.8
METALS	16.1	18.4
PUBLISHING, PRINTING	15.6	17.7
FOOD	14.7	15.7
ELECTRONICS	14.1	16.8
FURNITURE	13.9	15.9
CHEMICALS	13.2	16.8
SCIENTIFIC AND PHOTO. EQUIP.	13.0	12.1
COMPUTERS (INCL. OFF. EQUIP.)	12.7	14.7
AEROSPACE	12.0	11.4
RUBBER AND PLASTICS PROD.	11.4	15.8
TRANSPORTATION EQUIPMENT	10.9	13.4
MINING, CRUDE-OIL PRODUCTION	10.6	2.4
PETROLEUM REFINING	10.3	15.3
INDUSTRIAL AND FARM EQUIP.	9.3	12.7
TEXTILES	7.7	10.8
MOTOR VEHICLES AND PARTS	6.9	14.5
BUILDING MATERIALS	4.0	-3.3
THE 500 MEDIAN	15.0	16.2

INDUSTRY MEDIANS

CHANGES IN SALES

INCREASES	
SOAPS, COSMETICS	16.6%
TOBACCO	15.7
APPAREL	14.2
PETROLEUM REFINING	13.8
FURNITURE	12.4
COMPUTERS (INCLUDES OFFICE EQUIP.)	10.1
PHARMACEUTICALS	10.0
BEVERAGES	10.0
TRANSPORTATION EQUIPMENT	9.8
ELECTRONICS	8.7
FOOD	8.6
SCIENTIFIC AND PHOTOGRAPHIC EQUIP.	7.8
METALS	7.6
INDUSTRIAL AND FARM EQUIPMENT	7.3
FOREST PRODUCTS	7.2
METAL PRODUCTS	7.0
PUBLISHING, PRINTING	6.9
BUILDING MATERIALS	5.8
TEXTILES	5.7
CHEMICALS	5.2
RUBBER AND PLASTICS PRODUCTS	4.8
MINING, CRUDE-OIL PRODUCTION	3.6
AEROSPACE	3.0
MOTOR VEHICLES AND PARTS	2.4

CHANGES IN PROFITS

INCREASES	
PHARMACEUTICALS	19.6%
BEVERAGES	18.3
TEXTILES	15.3
FOOD	14.0
ELECTRONICS	10.3
METALS	9.7
PUBLISHING, PRINTING	8.6
SOAPS, COSMETICS	8.5
TOBACCO	8.5
MINING, CRUDE-OIL PRODUCTION	7.0
BUILDING MATERIALS	7.0
APPAREL	6.5
SCIENTIFIC AND PHOTOGRAPHIC EQUIP.	4.8
METAL PRODUCTS	3.4
CHEMICALS	0.1
DECREASES	
MOTOR VEHICLES AND PARTS	25.0%
AEROSPACE	12.5
PETROLEUM REFINING	11.8
TRANSPORTATION EQUIPMENT	9.4
COMPUTERS (INCLUDES OFFICE EQUIP.)	9.0
INDUSTRIAL AND FARM EQUIPMENT	8.6
FOREST PRODUCTS	5.3
FURNITURE	4.8
RUBBER AND PLASTICS PRODUCTS	2.2

TOTAL RETURN TO INVESTORS, 1989

MINING, CRUDE-OIL PRODUCTION	51.7
PETROLEUM REFINING	43.8
BEVERAGES	41.0
SOAPS, COSMETICS	39.7
PHARMACEUTICALS	37.6
FOOD	27.9
APPAREL	25.3
METAL PRODUCTS	24.9
FOREST PRODUCTS	19.8
CHEMICALS	17.6
PUBLISHING, PRINTING	15.4
TEXTILES	14.0
BUILDING MATERIALS	12.9
ELECTRONICS	12.6
TOBACCO	12.3
SCIENTIFIC AND PHOTOGRAPHIC EQUIP.	11.9
METALS	10.2
AEROSPACE	7.8
FURNITURE	1.8
RUBBER AND PLASTICS PRODUCTS	-1.6
INDUSTRIAL AND FARM EQUIPMENT	-2.2
MOTOR VEHICLES AND PARTS	-8.3
TRANSPORTATION EQUIPMENT	-10.4
COMPUTERS (INCLUDES OFFICE EQUIP.)	-17.1
THE 500 MEDIAN	17.5

INDUSTRY MEDIANS

TOTAL RETURN TO INVESTORS 1979-89 ANNUAL AVERAGE	
RUBBER AND PLASTICS PRODUCTS	29.2%
FOOD	27.1
BEVERAGES	26.7
APPAREL	24.0
TOBACCO	22.7
PUBLISHING, PRINTING	22.2
PHARMACEUTICALS	22.1
SOAPS, COSMETICS	22.1
FURNITURE	21.9
TEXTILES	21.4
METAL PRODUCTS	19.6
FOREST PRODUCTS	17.2
CHEMICALS	16.4
TRANSPORTATION EQUIPMENT	16.0
MOTOR VEHICLES AND PARTS	15.4
ELECTRONICS	13.0
PETROLEUM REFINING	12.9
SCIENTIFIC AND PHOTOGRAPHIC EQUIP.	12.1
AEROSPACE	12.0
BUILDING MATERIALS	11.4
METALS	10.1
INDUSTRIAL AND FARM EQUIPMENT	8.7
COMPUTERS (INCLUDES OFFICE EQUIP.)	8.6
MINING, CRUDE-OIL PRODUCTION	6.5
THE 500 MEDIAN	16.3

SALES PER DOLLAR OF STOCKHOLDERS' EQUITY	
FOOD	$5.52
TOBACCO	5.21
AEROSPACE	4.23
SOAPS, COSMETICS	4.13
MOTOR VEHICLES AND PARTS	4.07
APPAREL	3.95
TRANSPORTATION EQUIPMENT	3.64
FURNITURE	3.52
TEXTILES	3.48
RUBBER AND PLASTICS PRODUCTS	3.35
PETROLEUM REFINING	3.09
METAL PRODUCTS	3.01
ELECTRONICS	2.90
INDUSTRIAL AND FARM EQUIPMENT	2.89
METALS	2.77
COMPUTERS (INCLUDES OFFICE EQUIP.)	2.60
CHEMICALS	2.48
SCIENTIFIC AND PHOTOGRAPHIC EQUIP.	2.33
FOREST PRODUCTS	2.32
BEVERAGES	2.31
PUBLISHING, PRINTING	2.16
PHARMACEUTICALS	1.88
BUILDING MATERIALS	1.83
MINING, CRUDE-OIL PRODUCTION	1.56
THE 500 MEDIAN	2.96

SALES PER EMPLOYEE	
PETROLEUM REFINING	$537,026
MINING, CRUDE-OIL PRODUCTION	314,563
TOBACCO	226,636
FOOD	211,323
SOAPS, COSMETICS	209,117
CHEMICALS	205,813
METALS	195,750
BEVERAGES	194,426
FOREST PRODUCTS	177,000
BUILDING MATERIALS	155,000
PHARMACEUTICALS	142,807
PUBLISHING, PRINTING	123,952
COMPUTERS (INCL. OFFICE EQUIP.)	122,684
RUBBER AND PLASTICS PRODUCTS	122,573
AEROSPACE	121,002
MOTOR VEHICLES AND PARTS	117,941
METAL PRODUCTS	114,869
SCIENTIFIC AND PHOTO. EQUIP.	112,718
INDUSTRIAL AND FARM EQUIPMENT	112,091
TRANSPORTATION EQUIPMENT	109,539
ELECTRONICS	101,190
FURNITURE	95,280
TEXTILES	80,901
APPAREL	58,232
THE 500 MEDIAN	146,887

INDUSTRY TOTALS RANKED BY SIX MEASURES

	SALES		PROFITS		ASSETS		STOCKHOLDERS' EQUITY		MARKET VALUE		EMPLOYEES	
	$ MIL.	RANK	$ MIL.	RANK	$ MIL.	RANK	$ MIL.	RANK	$ MIL.	RANK	NUMBER	RANK
PETROLEUM REFINING	359,900	1	16,040	1	349,954	2	132,471	1	217,360	1	607,297	7
MOTOR VEHICLES AND PARTS	295,064	2	9,353	4	414,076	1	71,382	2	63,049	7	1,528,850	2
FOOD	209,480	3	6,933	6	171,288	4	43,236	7	120,587	4	1,104,407	4
ELECTRONICS	184,686	4	9,960	3	242,249	3	64,484	4	141,070	3	1,551,991	1
CHEMICALS	173,509	5	11,680	2	164,519	5	62,822	5	99,753	6	854,259	6
COMPUTERS (INCLUDES OFFICE EQUIP.)	136,424	6	5,660	8	140,446	6	69,452	3	114,543	5	955,423	5
AEROSPACE	132,427	7	4,296	9	107,192	8	34,803	8	48,870	12	1,169,502	3
FOREST PRODUCTS	106,799	8	6,923	7	115,809	7	43,397	6	59,827	8	590,497	8
INDUSTRIAL AND FARM EQUIPMENT	73,644	9	2,671	14	72,563	10	22,854	12	41,855	13	564,680	9
SCIENTIFIC AND PHOTOGRAPHIC EQUIP.	69,425	10	3,551	12	84,687	9	26,387	10	55,811	10	542,390	10
METALS	68,845	11	4,037	11	69,014	12	18,834	13	25,724	15	364,018	13
PHARMACEUTICALS	60,843	12	8,281	5	80,174	13	31,608	9	156,742	2	419,990	11
SOAPS, COSMETICS	45,907	13	2,057	15	34,908	15	11,848	15	32,758	14	190,105	20
PUBLISHING, PRINTING	44,370	14	3,173	13	60,756	11	26,141	11	57,992	9	323,087	14
BEVERAGES	43,747	15	4,136	10	47,290	14	17,987	14	54,281	11	381,525	12
BUILDING MATERIALS	27,315	16	832	20	26,107	16	4,094	21	9,167	19	212,537	16
METAL PRODUCTS	24,389	17	1,389	16	22,236	17	8,114	16	21,348	16	222,816	15
TEXTILES	21,984	18	189	23	17,534	19	5,482	19	4,030	22	206,291	17
RUBBER AND PLASTICS PRODUCTS	21,616	19	600	21	15,921	20	5,492	18	8,366	20	198,478	19
APPAREL	15,767	20	885	19	11,352	22	3,898	22	7,470	21	205,198	18
TOBACCO	13,971	21	1,290	17	14,925	21	4,461	20	9,751	18	79,067	22
FURNITURE	12,242	22	315	22	8,090	23	1,188	24	3,606	23	138,976	21
MINING, CRUDE-OIL PRODUCTION	11,594	23	1,044	18	20,531	18	5,667	17	18,929	17	38,538	24
TRANSPORTATION EQUIPMENT	7,046	24	64	25	4,973	24	2,006	23	2,685	24	62,278	23
TOYS, SPORTING GOODS	2,647	25	161	24	2,077	25	1,016	25	2,007	25	19,383	25
JEWELRY, SILVERWARE	696	26	54	26	453	26	222	26	1,008	26	8,264	26
TOTAL	2,164,347		105,573		2,288,122		719,045		1,379,571		12,539,817	

ALPHABETICAL INDEX

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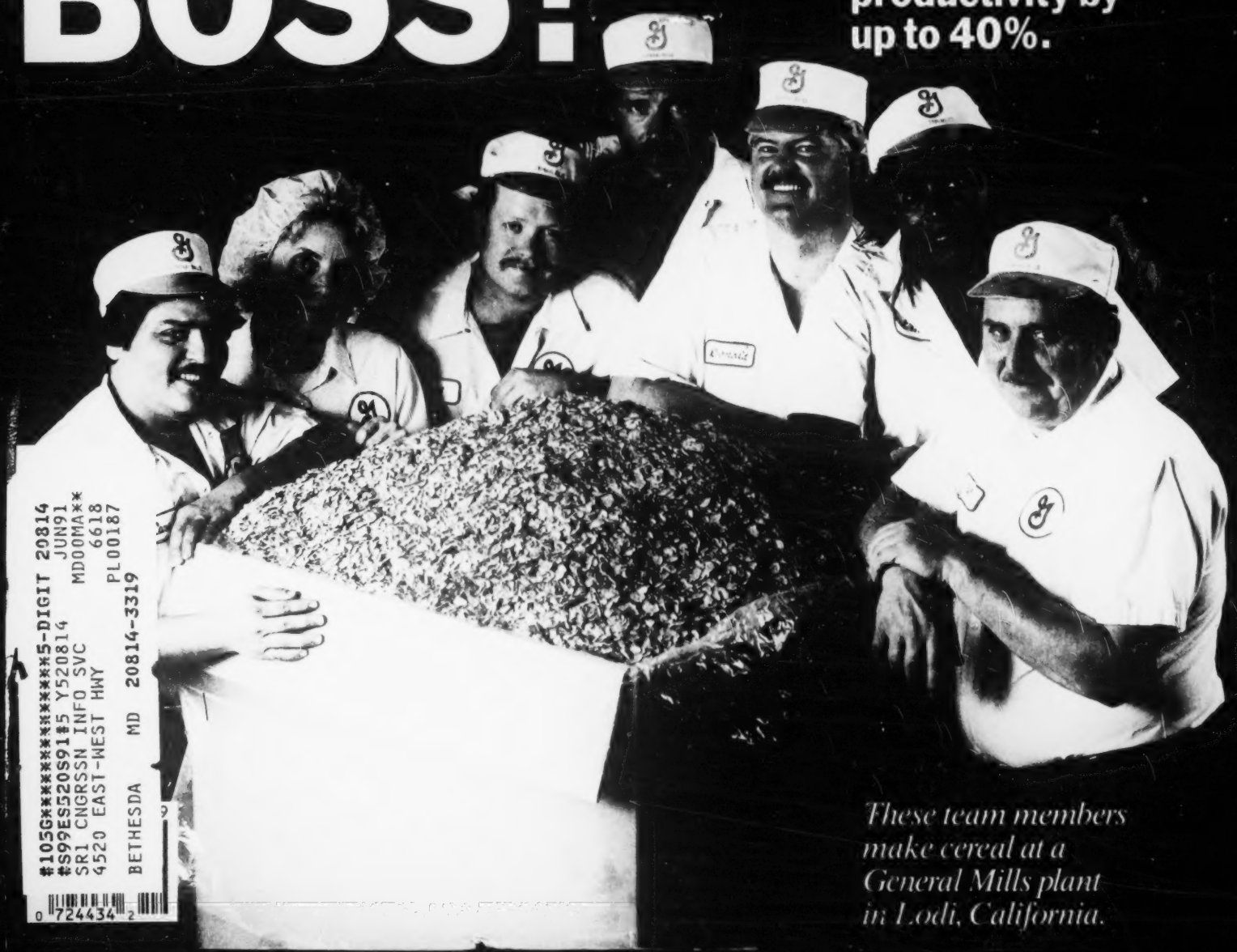
FORTUNE

WHO NEEDS A BOSS?

Not workers on self-managed teams like this one. They're boosting productivity by up to 40%.



These team members make cereal at a General Mills plant in Lodi, California.

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FORTUNE

"You have to ask, 'How complex is the work?' The more complex, the more suited it is for teams."

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ABOVE: Teamwork at Johnsonville Foods of Sheboygan, Wisconsin, photographed by Steve Woit.

COVER: Workers like these largely do without a boss at the General Mills plant in California, photographed by Doug Menuez—Reportage.

MANAGING/Cover Story

WHO NEEDS A BOSS? 52

Not employees in self-managed teams. They arrange schedules, buy equipment, fuss over quality—and dramatically boost the productivity of their companies. These superteams work as well in service and financial businesses as they do in manufacturing. The innovation has taken hold at such corporations as Procter & Gamble, General Mills, Digital Equipment, Federal Express, and 3M—and the phenomenon is spreading. It may be *the* productivity breakthrough of the 1990s. *by Brian Dumaine*

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The 28% price slide was more than a correction. The fundamentals of the Japanese economy have changed—maybe for good. *by Carla Rapoport*

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Parents of the baby-boomers are piling up trillions of dollars. Soon, in a historic transfer, the kids will be getting the estates. *by Alan Farnham*

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Just follow these three commandments to keep the company alive when you're not: Plan carefully. Groom a successor. And be pragmatic about estate taxes. *by Terence P. Paré*

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The world's largest mutual fund company is not the world's savviest investor. But it does know how to capture customers. *by Jaclyn Fierman*

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Many big ones are yielding market share abroad because they cannot raise capital as cheaply as their foreign competitors. *by Gary Hector*

NO PULLBACK FOR CITICORP 102

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"People like me, who see themselves as products of the Sixties, give to causes geared to political change."

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"I created a monster."

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"We don't want people to hang up."

PAGE 86

"Now even women are wearing jeans in Japan. I never would have predicted that."

PAGE 105

"With our forestry resources, if we had modern technology we could flood the world with cheap paper."

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"I'd like to think that what I've done is the prototypical way for a man to fade out."

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Unlike other companies that went private, the jeansmaker is not struggling under a load of debt. It's booming. *by Brenton R. Schlender*

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EDITOR'S DESK

WHEN they got their varied assignments some months ago, David Kirkpatrick, Michele McNally, and Brent Schlender went about them in their usual way—that is, with an extraordinary amount of passion, determination, and commitment. You should have such people working for you! Well, as a matter of fact, you do. Kirkpatrick, McNally, and Schlender are members of FORTUNE's editorial staff, and all of us work for you, our customer. I thought you would be pleased to hear that for their efforts on those assignments, Kirkpatrick, McNally, and Schlender—among other FORTUNE staffers—have been honored by juries of their peers.

JOHN ABBOTT (2)

Writer David Kirkpatrick

Picture editor Michele McNally

DAVID TOERGE

Writer Brent Schlender

The Computer Press Association has just given Schlender its first-place award for feature writing in a general-interest publication for his cover story in our October 9 issue, "How Steve Jobs Linked Up With IBM." Remarkably, Schlender, our man in Silicon Valley, was also a runner-up—for his story in our September 25 issue on "How to Break the Software Logjam."

Kirkpatrick's cover story on "Will You Be Able to Retire?" (July 31) not only brought requests for more than 225,000 reprints but also has been chosen as a finalist for the National Magazine Award for personal service. Kirkpatrick—who at 37 is both a genuine baby-boomer and far from retirement—got the idea for the story when he deduced that people of his generation will have to build up quite staggering sums if they are to live comfortably in old age.

McNally, our picture editor, has reason to flash a smile: Two of the photographers whom she and her assistant Elizabeth Krist chose and directed have won awards for their photos in FORTUNE. Photographer Dilip Mehta's evocative portrait of an exhausted manager at Citibank, in our cover story on "The Workaholic Generation" (April 10, 1989), won first prize for magazine portraits in the Pictures of the Year Competition sponsored by the University of Missouri School of Journalism and the National Press Photographers Association. And Gerd Ludwig's picture of a group of fathers learning about infant care, which ran in "Steps to Help the Urban Black Man" (December 18), took a third prize in the World Press Photo Competition.

All these honors reflect our goal to keep improving in meeting your needs. Which brings up yet another award. The Society of Consumer Affairs Professionals in Business, whose 2,500 members represent companies from Allstate and American Express to United Telecom and Volvo, has picked FORTUNE as winner of its annual Mobius Award. FORTUNE was cited for "its long history of featuring articles that highlight the positive aspects of good consumer affairs/customer service and underscoring the steps successful companies have taken to serve their customers."

Marshall Loeb

MANAGING EDITOR

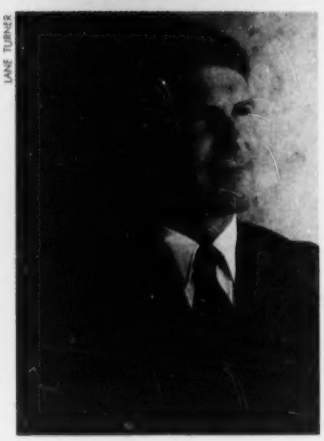
A GREAT TIME TO RENT

■ "It's tough to find anybody in the apartment market who isn't walking around with a long face." So says Robert Sheehan, an economist at the National Apartment Association, a lobbying group, of an industry that made 4.6% on its investment last year, compared with 7.6% in 1988. U.S. apartment owners—see table for the 12 biggest—are staggering after a binge of overbuilding in the 1980s, which has left rental income in the dumps. **Southmark** and **Cardinal Industries** have sought Chapter 11 protection from creditors. Balcor, an **American Express** subsidiary with big exposure in the weak Southwest market, has borrowed heavily from its parent to stay afloat. The few remaining strong regional markets, such as the Pacific Northwest and Las Vegas, threaten to dry up as developers elbow their way in with excessive construction.

To Jonathan Kempner, president of the National Multi Housing Council, an industry association, the troubled market means this is a good time for investors: "There are a lot of good buys out there."

Pension funds at **Shell Oil**, **Ameritech**, and California's public employees' **CalPers**, among others, agree. They have started to invest in apartment complexes while prices are low. **– C.D.**

STEVE LISS



LANE TURNER

Spence (top) and Gerrity

Do apartment owners' woes mean now is a good time to invest?

AMERICA'S BIGGEST LANDLORDS

COMPANY	HEADQUARTERS	NUMBER OF RENTAL UNITS
1. Nat'l Housing Partnership	Washington, D.C.	81,418
2. CRI	Rockville, Md.	73,600
3. Related	New York City	70,146
4. Lincoln Property	Dallas	63,206
5. Lefrak Organization	Rego Park, N.Y.	61,127
6. Balcor	Skokie, Ill.	60,000
6. Southmark	Dallas	60,000
8. Cardinal Industries	Columbus, Ohio	55,000
9. Winthrop Financial	Boston	50,392
10. Hall Financial Group	Dallas	49,236
11. Pru-Bache Securities	New York City	48,000
12. Trammell Crow Resident'l	Atlanta	47,202

SOURCE: NATIONAL MULTI HOUSING COUNCIL

NEW B-SCHOOL DEANS

■ The nation's top business schools have been churning out consultants like crazy, and now the chickens are coming home to roost at one such institution. Wharton has picked as its new dean Thomas Gerrity, 48, president of CSC Consulting, a subsidiary of **Computer Sciences**, a software firm. Gerrity, who succeeds Russell Palmer, July 1, taught at MIT's Sloan School for four years. Says Wharton professor Edward Bowman, who led the search: "A big issue was whether to pick a business executive or an academic. He has both characteristics."

Stanford has gone a more traditional route. Economics professor A. Michael Spence, 46, currently dean of Harvard's Faculty of Arts and Sciences, succeeds Robert K. Jaedicke in September. Spence wants to build a bridge between Stanford's business and engineering schools to help teach students to manage manufacturing. **– R.J.**

THE PIROSHKI HAS LANDED

■ While **McDonald's** gets into stride selling Big Macs in Moscow, another U.S.-Soviet joint venture is bringing Russian-style fast food—specifically, stuffed dumplings, or piroshki—to Norfolk, Virginia. **Chesapeake International**, a small trading company there, has imported two industrial-size dumpling-making machines from a Kiev manufacturer and opened a waterfront store aptly named Piroshki. It's sandwiched between a coffee shop and a seafood café. Soviet natives cook the food (see photo).

Virginians seem to like the fare, which also includes latkes, or potato pancakes. Said a customer of the latkes: "Loved your flapjacks!" Since the machines can produce 800 dumplings an hour each—Piroshki sells about 600 a day—Chesapeake partner Sam Werbel is trying to line up extra sales at local supermarkets. Given today's interest in the Soviets, says he: "We think the timing is right." **– M.A.**

RAYMOND GEHMAN—PICTURE GROUP

Soviets make dumplings over here.

NOW HEAR THIS

■ **DOUG GUSTAFSON,** 52, in Poland on behalf of the World Bank's International Finance Corp., on the country's rush to capitalism:
"It's messy. But that's what freedom's about, and we may as well get on with it."

■ **DALE McDANIEL,** 50, a Federal Aviation Administration administrator, on the increasing public protest over aircraft noise in and around airports:
"It's sort of like smoking. People's tolerance keeps going down."

■ **MARVIN LEATH,** 58, U.S. Congressman (D-Texas) and a member of the Armed Services Committee, on the reaction of military contractors to reduced Pentagon spending:
"The best way you can describe it is, they're in stunned panic."

Two floor traders on the Tokyo Stock Exchange (in center of photos) struggle to get past each other to execute orders during a frenzied week in which the Nikkei

WHAT'S AHEAD NOW

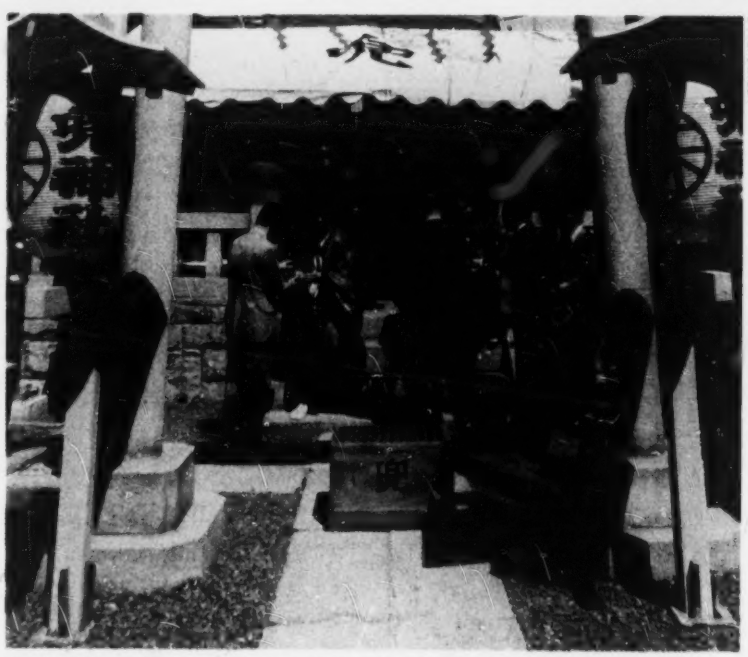
The 28% price slide was more than an overdue correction of breathtaking financial excess. The fundamentals of the Japanese economy have changed—maybe for good. ■ *by Carla Rapoport*

THE RECENT LOSSES on the Tokyo Stock Exchange seem every bit as staggering as did the gains. With $1 trillion wiped off its value—the equivalent of $9,000 for every man, woman, and child in Japan—the market won't shake off this trauma anytime soon. Even those who see greater heights down the road acknowledge that the ascent from here will be much, much tougher. The momentum is gone. Says Keikichi Honda, chief economist at the Bank of Tokyo: "The bubble has burst."

Rarely have markets run so high for so long and in the end provided such a breathtaking display of financial excess. During much of the run-up, superhigh price/earnings ratios were at least explainable by understated corporate earnings and other unique aspects of Japan's financial system. By early January, though, P/Es soared beyond all understanding. Many looked more like bowling scores than any meaningful measure of value. Transportation stocks traded at an average P/E of 216, fishery and forestry stocks at 236, and shipping companies at 160.

Still, to view the market's sharp break as simply an overdue correction would be to miss the real message. Financial markets don't move in a vacuum; they reflect important changes in underlying economic fundamentals. Some are obvious, like higher interest rates and a weakening yen against the dollar. Notes Ryoichi Hirose, manager of Dai-Ichi Mutual Life's $39 billion stock portfolio: "Japan's situation of being blessed with the three lows—low interest rates, a low dollar, and low oil prices—is now changed."

Other reasons are more subtle and probably more significant. Since 1987, Japan's economy has been riding a giant bulge in the nation's money supply. During the past three years money growth has averaged more than 10% annually. The reason, say Japanese officials, was to relieve the economic strain from the strong yen, which crimped the volume of exports. They also wanted to stimulate domestic demand in response to pressures from the U.S. and the European Community to reduce Japan's surging trade surplus.



SANEI SHIMBUN

Praying for a rally: Stock exchange officials visit Shinto priests at a shrine in Tokyo.

The unintended side effect was an ebullient market in everything from stocks to real estate—what economists call asset-price inflation. Before long, however, inflation threatened to move from assets into the general economy. The first worrisome signs appeared in 1989 when wage growth outstripped productivity growth. Inflation, as measured by the wholesale price index, crept up to a 2.5% annual rate, still

PHOTOGRAPHS BY TAKESHI YUZAWA

stock average fell 2,244 points. For 12 years of steadily rising prices, traders haven't had to cope with the pressures of a bear market.

FOR TOKYO STOCKS

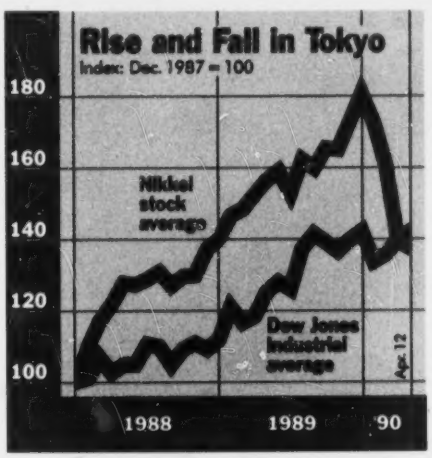
low by Western standards but enough to put downward pressure on the yen. Though currency traders were backing away, stock market investors failed to see that their wonderful world was about to come undone. Most remained mesmerized by the market's steady, unrelenting rise.

To counter the inflation threat, the Bank of Japan began to bump up the official discount rate. During 1989 it raised the rate three times. But as many see it, the steps by Bank of Japan governor Yasushi Mieno were too little, too late. The yen has continued falling, generating new concern about yet another strain of inflation from higher-priced imports. By the time of the third discount rate rise in December, stock market investors finally caught on that the party was over.

MAKE NO MISTAKE: The engine powering Japan's industrial machine is hardly sputtering. Indeed, the recent 20% fall of the yen has been a bonanza for Japan's big exporters. Nissan says it makes an extra $38 million in profits for every 1 yen the currency drops against the dollar. But the yen's weakness and the subsequent stock market slide strongly suggest that the happy-go-lucky days for Japan's economy may be at an end. The new era, analysts worry, may be one where inflation and higher interest rates become the new, unruly bedfellows of strong economic growth. That's not a disaster, but it is a sufficiently good reason to start bailing out of an expensive stock market.

Though the Tokyo market has seemed resilient for so long, it didn't take much selling pressure to get a bear market going. Most Japanese investors are momentum buyers, so they only buy stocks that are going up. If a stock comes under even slight selling pressure, they back away. The drop so far in 1990 has been largely confined to two relatively small groups, foreign investors and so-called *tokkin* funds, which are managed investment accounts for spare corporate cash.

If some of the bigger investors decide to switch to bonds, the market could hit another downdraft. The higher yield offered on bonds is already taking a toll. Nearly $48 billion flowed into Japan's equity investment trusts over the past two years. But this year, Yukio Hosoi, president of Daiwa Investment Trust, predicts almost no growth for the equity fund business. Nobumitsu Kagami, managing director of Nomura Investment Trust, thinks institutional investors will stay out too: "I don't think many portfolio managers will be making significant bets on the stock market with interest rates at 7.3%. There's no incentive."



FAR MORE TROUBLING than mere lack of demand for stocks is the potential for heavy selling in the year ahead, something Japan's stock market hasn't had to contend with for more than a decade. Through much of last year, individuals made generous use of margin debt to buy stocks. Under Japan's laws, margin debt can be extended for only six months, at which time the investor must either come up with enough cash to buy the shares or liquidate his position. With so many stocks selling below their level of six months ago, analysts worry that many investors will liquidate when margin loans expire. Akira Suzuki, chief investment strategist at Morgan Stanley in Tokyo, estimates that between May and August some $37 billion of margin debt will come due.

Japan's life insurance companies, the biggest single investor-group in the stock market, could also start heading for the exits. Though most insist they are still committed to stocks, that bullish sentiment won't amount to much if clients begin to think otherwise. In the mid-1980s many investors were attracted by high returns to five-year annuity policies, which the insurance companies invested partly in the stock market.

With stock returns down, annuity investors may be inclined to shift to government bonds, where yields are nearly triple the level of three years ago. Brian Waterhouse, a financial institutions analyst with James Capel, estimates that Japanese life

REPORTER ASSOCIATE *Susan Moffat*

Born to save, Japanese consumers are learning to spend. The market slide won't slow them down.

insurers could face redemptions of $6 billion per year: "It's a potentially serious problem for the market."

DESPITE THE BAD news for stocks, investors remain surprisingly calm. Says Ikuo Enomoto, managing director of Yasuda Trust and Banking Co., one of Japan's leading pension and fund managers: "Walk down the street and look at people's faces. They're not worried. They're talking about baseball and the cherry blossoms." Unlike many Americans, who suffered from acute anxiety after the 1987 stock market crash, Japanese remain confident that their economy is strong enough to weather any financial storm.

They have reason to be upbeat: Japan's GNP staged a 4.6% advance last year, compared with 3% in the U.S. Despite sagging exports, the growth was achieved on the strength of strong consumer spending and surging corporate investment in plant and equipment. Economists expect this trend to continue. Capital spending should expand 8% to 9% this year because Japanese companies have sufficient cash reserves to cover their investment plans. According to government statistics, only 13% of Japanese capital spending came from loans or equity financing last year, so even if the stock market remains unfriendly, business should be able to buy what it wants.

Nor should the stock market's troubles slow down consumer spending. Real disposable income will likely grow by about 6% this fiscal year, mainly because of wage increases. Only 14% of Japanese personal financial assets were invested in the stock market at the end of last year, while the savings rate remained at around 15%. As a result, most analysts predict at least a 4% increase in personal consumption this year.

Though economic growth should not suffer materially because of the market, analysts do worry that the higher interest rates that helped bring down stock prices could also hurt a number of weak-kneed corporations. Akio Mikuni, who heads a corporate credit rating service in Tokyo, predicts "many bankruptcies" if interest rates rise anymore. He says the ranks of the unhealthy have risen dramatically in recent years. Mikuni's bond rating service, for example, classifies a surprising 30% of Japanese bonds as speculative-grade credits—in other words, junk.

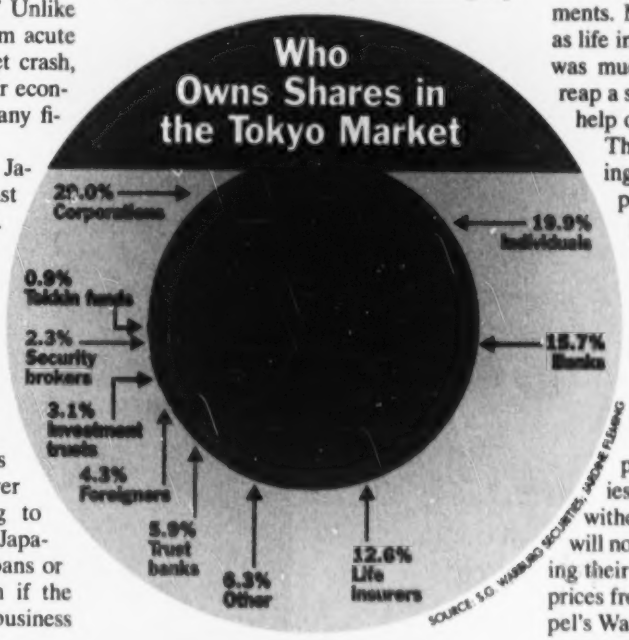
"Look at people's faces. They're not worried. They're talking about baseball and cherry blossoms."

Higher interest rates could also imperil some banks, according to Mikuni. Cash-rich companies have been borrowing less and less from banks in recent years, forcing Japanese banks to lend to less creditworthy customers. And because the finance ministers of the major industrial nations have been unable to come up with a plan to support the yen, the Bank of Japan might well raise the discount rate again.

So far the U.S. has been largely unaffected by Japan's financial problems, but that may not last much longer. Americans have learned to love Japanese cash as an easy way around the U.S. budget deficit. Estimates vary, but most agree that Japanese investors have accounted for 30% to 35% of U.S. government bond auctions over the past few years. Already there are signs that Japan's monetary squeeze will also damp down the flow of funds into U.S. bonds. Analysts at Salomon Brothers in Tokyo estimate that net purchases of U.S. bonds will fall by half in the fiscal year that ends in March 1991.

Some outright selling of U.S. bonds could begin if big Japanese investors decide to start taking some profits on their investments. Most of Japan's big investors, such as life insurers, bought bonds when the yen was much stronger. By selling they could reap a substantial currency gain that would help offset stock market losses.

There are some positive effects. Falling stock prices will ease inflationary pressures in Japan. Perhaps more important, lower prices may also prompt Japanese companies to change their attitude toward stockholders. Traditionally, the Japanese have treated shareholders like unwanted guests, dribbling out miserable dividends with the sure knowledge that capital gains would keep investors happy. Many of Japan's biggest companies have gone a decade or more without raising dividends. Corporations will now have to think hard about improving their payouts if they want to keep share prices from sliding much further. James Capel's Waterhouse says, "For the first time in recent memory, the shareholder will no longer be a third-class citizen in Japan." In more ways than one, the plunge in Tokyo's stock prices could make Japan a more hospitable place to invest. F



In the ride down so far, foreigners and tokkin funds have been the heavy sellers. The Tokyo stock market could take another hit if individuals and insurance companies start dumping shares.

THE WINDFALL AWAITING THE NEW INHERITORS

Parents of baby-boomers are piling up trillions of dollars. Soon, in a historic transfer, the kids will be getting the estates. Be nice: They might spend it on you. ■ *by Alan Farnham*

THE MEEK SHALL INHERIT the earth, but not before baby-boomers—a notoriously more self-assertive bunch—get first crack. The oldest of them are now 44, putting elder parents well into their 70s. While many such parents can look forward to leading active, vital lives stretching into the next century, all will pass eventually.

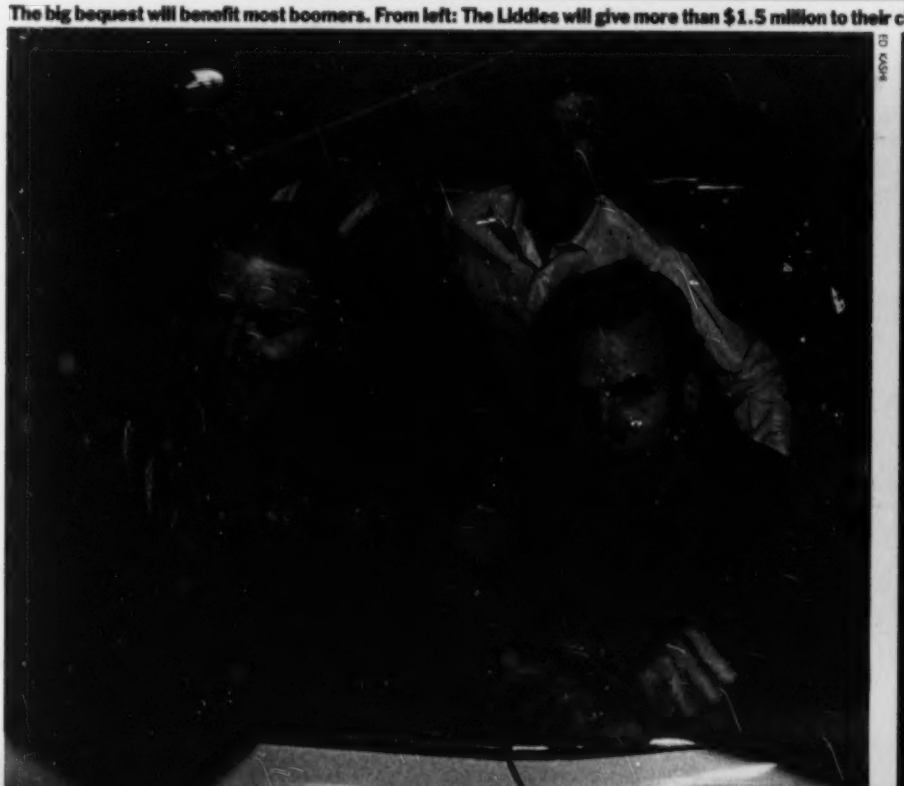
The result will be a social watershed: the biggest intergenerational transfer of wealth in U.S. history. People 60 and older have accumulated a collective net worth of as much as $6.8 trillion, according to economist Robert Avery of Cornell University. As it cascades into the waiting laps of the kids, the American middle class will, for the first time, inherit significant assets en masse.

Taxes and medical expenses will claim some of the legacy, and today's long-lived seniors may decide to spend more in their sunset years than the elderly have in the past. But barring repeal of the first law of thermodynamics, the money has to go somewhere—if not to heirs, then to doctors and health care workers, airlines, the Treasury. As the chart on page 74 shows, the redistribution of wealth at flood tide (2002-06), could amount to as much as 6.5% per year of GNP. On balance, the great handout is likely to shift money from savings (the parents') to consumption (the kids'). Says Frederick Elkind, director of Ogilvy & Mather's TrendSights division: "Depending on what shape the economy is in when inheritance hits, the infusion of money could get us out of a recession or turbocharge consumer spending to unprecedented levels."

Roughly half of the total will go to the boomer generation, and the assets are already flowing. "People are inheriting more and more money every year," says Alexander Bove Jr., 51, a Boston tax lawyer. "My father, a machinist in a shipyard, left a $150,000 estate. In my kids' generation, because of what's happened in terms of parents' real estate appreciation, profit sharing, pensions, and life insurance, we're going to see millionaires created just by the parents' dying off. It's nothing now to have half a million dollars' worth of life insurance. If my wife and I dropped dead, my son and daughter will get $1 million *each*."

The prospect of money-laden heirs (call them enhanced boomers) has ad executives in a lather of anticipation. "We've definitely been thinking about them," says Elkind. Pe-

The big bequest will benefit most boomers. From left: The Liddles will give more than $1.5 million to their children, including sons John (foreground) and George.



I LOVE DADDY'S MONEY

ter Kim, a senior vice president at J. Walter Thompson USA, says he expects patrimonies in the $150,000 to $500,000 range to be common. A luminous sliver of inheritors could fare still better. This Golden Cohort, made up of consumers now in their mid- to late 40s, faces a patrimony of $2 trillion.

Will inheritance bring greater inequities to American society? Some economists think so. Richard Michel of the Urban Institute believes that real estate will fall in value relative to financial assets during the 1990s. Thus lower-middle-class people, whose homes are their most important assets, will lose ground against wealthier families, who have more stocks, bonds, and cash.

But the trends that created today's broad middle class also spread the wealth widely. Children whose families have been accustomed to handing down nothing more substantial than a watch, a bible, and a blessing will come into significant sums. The parents began saving and accumulating in a sunny postwar climate. That sweetness lingers on, put up like jelly in the bank accounts, homes, pensions, insurance policies, and other assets amassed by even low-level managers or senior clerks at big American companies.

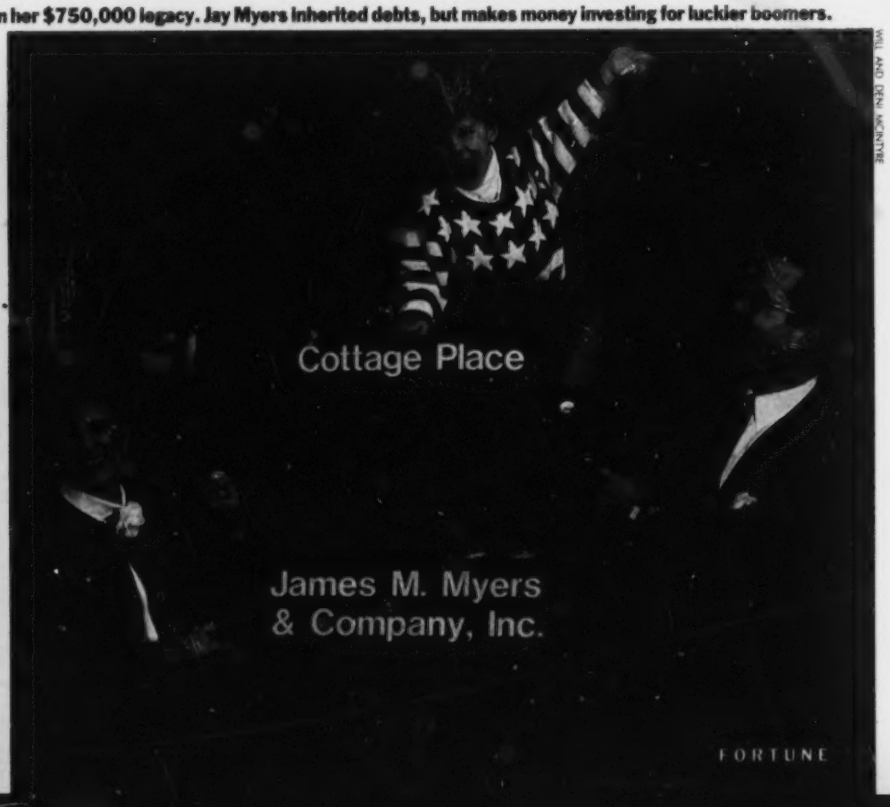
"IT'S REAL ESTATE that made them rich," says Shona Magnetti, 35, half-owner of Deer Harbor Contractors in San Francisco. She's partly right. Homes account for about a third of the average household's assets, roughly the same proportion as financial assets. And about 60% of homeowners over 62 own their houses debt-free. Properties that Magnetti inherited in 1976 have appreciated more than 114%. From 1970 to 1988, the median price of an existing U.S. single-family home rose from $23,000 to $89,300—faster by more than a third than median household income. (Today's median home price stands at over $92,500.)

Many of the new inheritors do not yet comprehend what awaits them. Steven Enright, a New Jersey financial adviser, counsels parents to prepare what he calls a "survival kit." This document, which includes a balance sheet, explains to children the location and value of parental assets should the parents die. Most children, says Enright, are very surprised by what they see. Throw in a $350,000 home, a couple of hundred thousand dollars' worth of life insurance, $150,000 in a pension plan, savings, stocks and bonds, and a few odds and ends and in no time you're got an unexceptional $800,000 estate. Surprise is relative: Children who suspect their family may be worth a million are shocked—but not saddened—to find out it is $4 million.

If parents are in good health, Enright recommends they wait until children have reached their early 30s to tell them the fi-

Shona and Phillip Magnetti started a business with help from her $750,000 legacy. Jay Myers inherited debts, but makes money investing for luckier boomers.

GEORGE STEINMETZ



WILL AND DEN MCINTYRE

nancial facts of life. Telling them earlier may be safe, so long as they are mature, stable, and earning their own money. Disclosure is imperative if the parents are handing down a family business (see following story). Enright admits, however, that some families are better off telling children nothing. In every case, parents must weigh the risk of arousing a child's greed against the benefit of having him prepared—emotionally and financially—to handle an estate.

In some families, the very mention of inheritance is taboo. Observes Jerry Gerber, co-author of *Lifetrends*, an analysis of aging boomers' sensibilities: "There aren't many kids who feel comfortable saying, 'Let's talk about your death and dying, Dad.' " Mary Ann Liebert, a Manhattan publisher of medical journals, agrees: "It's an invasion of privacy to ask your parents how much they've got. It seems awful to think about. Here's your parent, who's in good health, and you say, 'Gee, we should go to this lawyer and protect your assets, and how much do you have, and let's transfer this money to my name.' All of this *maneuvering*."

People who are not all that much younger than their parents are especially loath to be thought of as having sweaty palms. Says John Liddle, 35, of Menlo Park, California: "My parents had me when they were young, so in my mind, they aren't old yet. My granny's still going strong at 84, planning trips to Europe. My thinking about their deaths would be like something out of Balzac."

YET MANY PALMS are moist. Pour a boomer a drink, and he may confess to vulturish daydreaming. Says a 41-year-old who asks not to be identified: "When my wife and I think how we're going to pay for our kids' college, I think . . . maybe Gramps will kick soon. I feel like Prince Edward waiting for Queen Victoria to die."

There is reason to suspect many more boomers toy with the idea of inheritance than let on. "We're beginning to see why so many boomers live a leveraged lifestyle," says J. Walter Thompson's Kim. "They expect to inherit." That same attitude, says Magnetti, may account for her generation's reluctance to say how it plans to pay for retirement: "On some level they expect the money will come."

A brave minority freely admit they think about inheritance *a lot*. And for good reason: To boomers confronting life's biggest financial hurdles (buying a home, putting kids through school, financing their own retirement) parents seem awash in money. Louis Mandell, professor of finance at the University of Connecticut, provides a personal example: "Take my parents. They have so much money from their pensions, from Social Security. And what do they do with it? I go down to Florida to visit them, and I can't even take a shower because they keep the hot water turned off until somebody needs it. This is saving them . . . what?—a dollar a month? Then they complain to me they don't know what to do with their money, it's piling up. An extra three, four thousand dollars a month they can't spend."

Boomers also see the generation just ahead of theirs—the so-called Silent Generation born in the 1930s and early 1940s—getting its full patrimony now. Jay Myers, 36, owner of a stock brokerage in Charlotte, North Carolina, has a ringside seat: "All of a sudden, the guy at the phone company who makes $20,000 a year joins the country club and buys a Volvo. How else do you suppose he's doing it?" They also buy stock, luckily for Myers. His own father died uninsured in 1968, leaving debts behind. Inheritance won't put *every* boomer on easy street.

Even the biggest bundles of parental loot can disappear like so many pinballs. How much money actually will make it into boomers' pockets? There's many a slip 'twixt the crypt and the hip.

IRS data show that gross estates of $600,000 to $1 million typically are preshrunk 11% by the combined action of just three forces: debt and mortgage payments, funeral and administrative costs, and charitable bequests. New uncertainties, however, threaten to shave estates much closer.

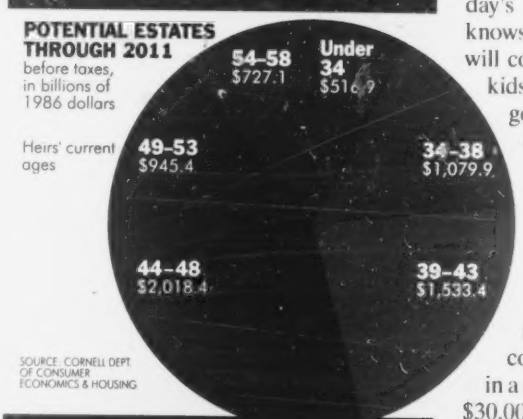
No one knows for certain how long today's elderly will live—meaning no one knows how much of their own money they will consume. Having spent plenty on their kids, they feel less obligated than earlier generations to save every remaining dime for the children's benefit, and more inclined to gild their own golden years. The folks who sport bumper stickers and sweat shirts saying WE'RE SPENDING OUR KIDS' INHERITANCE aren't always joking.

Health care may shrink net worths rapidly, especially for seniors who become incapacitated. The cost of staying in a nursing home now averages $25,000 to $30,000 a year. Drugs and medicines can add thousands more. More than 10% of elderly Americans need such long-term care today, and the proportion is likely to rise.

New financial products make it easier for parents to draw down their resources. Prudential Insurance Co. in February introduced a "Living Needs Benefit Plan" aimed primarily at nursing home patients and the terminally ill. Under it, policyholders, while still alive, can pay themselves full death benefits. Result: Money that previously would have gone to heirs is consumed by the insured.

Boomers who think that the government will pick up most or all nursing home costs—some 25% of those recently surveyed by the American Association of Retired Persons—are in for a shock. Medicaid starts paying only after a patient with limited income has spent himself down to basement level. (He can typically retain his home and such assets as an automobile, a prepaid

Who Will Share the $6.8 Trillion Pie . . .



and Its Economic Impact

YEARS	TOTAL ESTATES in billions of 1986 dollars	TOTAL ESTATES as a percent of GNP
1987–1991	$778.9	4.3%
1992–1996	$1,098.8	5.3%
1997–2001	$1,464.8	6.3%
2002–2006	$1,707.0	6.5%
2007–2011	$1,771.6	6.1%

SOURCES: CORNELL DEPT. OF CONSUMER ECONOMICS & HOUSING; WEFA GROUP

The slices show the maximum amount parents of each age group are expected to leave behind when they die. The kids won't get it all: Some will go to taxes and medical care. But every dollar will boost economic activity as it turns over.

burial contract, and $2,000 in cash.)

At the moment, families' anxiety over qualifying for government assistance appears to be encouraging wealth transfers. If a parent shifts assets to his children (or into an irrevocable trust), more than 30 months before he needs a nursing home, he can qualify as indigent. U.S. taxpayers then pick up the part of his stay not covered by his income. (The IRS deducts these parent-child transfers from the $600,000 that the parent can leave tax-free to his children at death.) This does not necessarily mean checking dad into a hellhole. By law, facilities that accept both privately supported and Medicaid-supported patients cannot discriminate against the latter. Both must receive the same quality of care, though usually only patients paying full freight get private rooms.

Financial planners and attorneys who specialize in the protection of the elderly's assets report that such transfers—on the increase for years—now are common. Alexander Bove, who covers transfers in his book, *The Medicaid Planning Handbook*, says that in his practice three out of four are initiated not by parents but by children. Robert Freedman, a New York City attorney and transfer specialist, says his practice has grown from two to five lawyers in two years. He thinks transfers may be accelerating inheritance by as much as five years.

CHILDREN whose parents enter communal living situations such as retirement villages may be in for surprises. Inevitably, a parent forms new friendships. Romances are begun. The result, explains sociologist Jeffrey Rosenfeld, is that residents can wind up making substantial bequests to other residents. When the will is read, heirs may discover: *My son and daughter, whom I have made comfortable already, will understand I have a friend who needs the money more than they.*

"Imagine waiting for Aunt Sadie to expire," exclaims Rosenfeld, "only to find out her estate now has to be shared with Aunt Sadie's bridge partners!" While state law in such circumstances usually supports a surviving spouse's claim on a third to a half of the estate, few if any states offer children such protection. They must sue to recover, arguing that the parent either was mentally incompetent or subject to undue influence. Both are tough to prove.

Better Aunt Sadie's partners than some bizarre kooks. Political and religious groups have targeted nursing homes as their new happy hunting ground. "They're going where

TIMOTHY GREENFIELD-SANDERS

The giveaway gang, clockwise from top: Winslow, Pillsbury, Hoffman, Collins, and Crocker

PICKING THEIR OWN POINTS OF LIGHT

When the baby-boomers share their good fortune with charities, who will be on the receiving end? Mainstream outfits shouldn't bank on their largess. Young donors are showing themselves to be as persnickety in funding good works as they have been choosing cabernets and ice cream.

When doughboy George Pillsbury, 40, inherited $1,000,000 from his family's namesake baking business 20 years ago, the United Way got zero. Pillsbury used his fortune to co-found Haymarket People's Fund, a Boston charity that supports groups the big charities eschew. Among them: Northeast Vermonters for Gay and Lesbian Rights and the Cambridge–El Salvador Sister City Project. Haymarket and 14 other boomer-backed new-wave philanthropies have since banded together into the Funding Exchange—a national network that last year gave away $5.5 million, most of it in closely targeted grants of $2,000 each.

Says Haymarket donor Barbara Winslow, 44, heir to approximately $1.5 million from the Supp-Hose panty hose fortune: "People like me, who see themselves as products of the Sixties, give to causes geared to political change." Annie Hoffman, 35, gives away about $10,000 a year between Haymarket and the Funding Exchange. "My grandmother gave to her hospital and the zoo," she says. "But my generation was politicized through Vietnam, the women's movement, and gay rights." Her money came from family investments in Kodak and other companies. Chuck Collins, 30, a great-grandson of Oscar Mayer, inherited $300,000 eight years ago and has given *all* of it away, mostly to Haymarket and the Funding Exchange. Earlier this year the exchange recognized his generosity by conferring on him a new award—the Robin Hood.

The boomers' consciences also affect their investment decisions. David Crocker's $500,000 inheritance partly came down, along with his vocation, from Paine Webber co-founder William Paine. An investment adviser with Bernard Herold & Co. in New York City, he counsels clients to pass up investments in companies that sell or manufacture military hardware ("killing machines"). Says Crocker, 41: "When my great-grandfather raised capital to build new businesses, he was providing jobs and services. I feel I'm doing the same thing, but taking social values into account."

the money is," explains Cynthia Kisser, executive director of the Cult Awareness Network of Chicago. Another monitoring group, International Cult Education Program, says it is getting ever-increasing calls from kids worried their parents have begun to show an unwholesome interest in channeling the spirit world. The generation that grew up with vacuum tubes may go out with crystals.

AFTER HEALTH CARE and nursing home costs, the most important variable affecting inheritance will be real estate. Pessimistic forecasts abound, such as the one by Harvard economist Gregory Mankiw for the National Bureau of Economic Research, which argues that real housing prices could fall by as much as 47% between now and 2007. Boomers moved by such fears are already responding. Says Paul Hewitt, 37, a retirement analyst at the Hudson Institute: "I've been telling my mom, quite frankly, to get out of her house. Sell it now."

Don't rush to put mom out. Most economists are more sanguine, expecting real estate prices to stay generally ahead of inflation. Kenneth Rosen, head of the Center for Real Estate and Urban Economics at the University of California at Berkeley, notes that certain markets now depressed—including Boston and the New York metropolitan area—will stay down for a time. But he argues housing overall will remain a good investment.

No matter what happens to housing prices, real estate may sweeten the pot less than boomers expect. Reason: Reverse mortgages, which let home owners trade equity for a lump sum or for a monthly cash payment, decrease the likelihood boomers will inherit all of home sweet home.

Another unknown: inheritance taxes. Under current law, the Feds will not staunch the flow of assets to middle-class inheritors. Both parents combined can give $1.2 million to their children, tax-free. Present rates are so generous to middle-class inheritors that even financially sophisticated boomers have trouble believing them. (On a $1 million estate, for example, federal taxes average $119,800; state taxes $33,200.) Inheritance taxes for the middle class in other industrialized nations generally are higher.

That could change. The Congressional Budget Office, in its February report to Congress, estimates that halving the $600,000 exemption would generate $1 billion a year in new revenues. Another possibility: taxation of capital gains at death. Says Dick Kinyon, senior estate planning partner at the Morrison & Foerster law firm in San Francisco: "It would probably raise more revenue."

Litigation is the last hurdle to consider. Says sociologist Rosenfeld, who often testifies as an expert witness in will wrangles: "People believe contesting wills is a sport of the very wealthy. It isn't. There is litigation over very small estates. You'd be amazed how much involves sentimental items."

Considering the long gantlet inheritors must run to get what's coming to them, it isn't too early for them to begin taking precautionary measures. Jerry Gerber, co-author of *Lifetrends*, advises boomers to buy long-term health insurance for their parents. Example: For around $1,250 a year, a child could buy long-term health insurance for his parent aged 65. One such policy, by John Hancock, pays a $120 daily benefit for three years—enough to cover the costs of an average nursing home stay.

As boomers mature, one important scruple will survive intact from the Eighties: They will refuse to buy anything less than worldclass products.

"And if I were a boomer," Gerber continues, "I'd try to put the hit on my parents now—before chronic illness sets in or some other child in the family needs help." He raises a telling point: The baby boom is called the baby boom because of all those kids. Says Cheryl Russell, editor in chief of *American Demographics*: "Parents aren't so affluent that when you divide by three or four it doesn't make a difference." The boomers' share of the great inheritance pot, split among some 64 million people, works out to around $55,000 per person.

When inheritance finally comes, how will boomers react? Sometime between now and 2011, in a scene from an Agatha Christie novel writ large, millions of heirs will have assembled to hear the reading of their parents' will. Alexander Bove, who has been listening to heirs' gasps for 17 years, leans back in his chair and says, "I see it all. I see greed. I see surprise. I see total confusion. And I see people buying what they never could before."

Puzzling out those prospective purchases is a growing preoccupation for marketers. What boomers do with their patrimonies will depend on the stage of life they will have reached. If today's young have one major misconception, it is that parental money will come when it's most needed. The majority will not inherit until they reach their 50s and 60s. "At that point in your life," asks Lou Mandell, "do you really want a bigger house? It may just be one more hassle. A Ferrari? That's a pretty uncomfortable car. Your reflexes may not be up to driving 160 miles an hour." This thought already has occurred to the marketing people at BMW. "I don't see somebody 50 years old rushing out to buy a car," says BMW's Carl Flesher, vice president of marketing. "He'd buy something like a TV instead."

For adults who are already comfortable, inherited money will be among the most disposable of income. Those without kids (20% of all boomers, according to current projections) will feel especially free to spend it on a cruise or wardrobe. Such boomers' reactions to getting their windfalls will have been voiced for them, years ago, by Sandy Bowers, a miner who struck it rich on Nevada's Comstock Lode. Said he: "Now I have money to throw at the birds."

Some men and women will pay off bills—those who have scrimped to put their kids through college, who haven't yet funded their own retirement, and who, at age 55, may still be using Visa to cover American Express. Says Kim of J. Walter Thompson: "I expect to see lots of debt consolidation." Others may use their bundles to set themselves up in business.

BOOMER attitudes may predict their behavior. Laurel Cutler, vice chairman of the FCB/Leber Katz advertising agency, expects boomer spending to be guided by new personal values both more mature and more family-centered than the ones that prevailed in the 1970s and 1980s. One important scruple, though, will survive the transition intact: Boomers will refuse to buy anything less than worldclass products. Cutler expects increased spending on home enhancements the whole family can enjoy: swimming pools, computers, and electronic systems blending video and music that provide not only entertainment but education as well.

Faith Popcorn, the Nostradamus of consumer marketing and chairman of New

REPORTER ASSOCIATE *Jacob Park*

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York's BrainReserve, a consulting firm, expects more lavish spending on services. Some boomers may move to ecologically desirable or enlightened venues—Seattle, specifically—or make trips to the world's unravaged spots. Money managers and investment advisers will be in high demand, especially those who can suggest politically and ecologically correct investments.

Will the boomers put the money away for their own old ages? "If they're smart," says Arnold Brown, chairman of New York management consultants Weiner Edrich Brown. "They should invest it in something that will guarantee them a comfortable old age—and I don't necessarily mean stocks and bonds. They could put the money in a prepaid life care facility, or buy some as yet unavailable form of insurance."

So far, boomers have been more noted for profligacy than thrift. FIND/svp, publishers of the *Boomer Report*, a marketing newsletter, convened a focus group in November to ask boomers what they were doing to ensure financial security. One said she was investing in Hallmark Christmas ornaments.

"Inheritors should invest it in something that will guarantee them a comfortable old age—and I don't necessarily mean stocks and bonds."

But many economists expect more sober behavior as the boomers mature. Optimists like Edward Yardeni, chief economist of Prudential-Bache, think their reluctance to save is not so much evidence of a character defect as of precociousness. They have been quicker to buy their first car, home, and other badges of adulthood than past generations. Now that their buying spree is cooling, Yardeni expects boomers' savings rate to rise to 10% or more. Realists think 6% to 7% is more like it. Either way the wealth transfer will at least temporarily diminish America's savings rate, because the inheritors will be spending some of the assets their parents had accumulated.

Heirs who find they dropped out of the work force before they adequately provided for retirement will have to live off the money. In the end, inheritance could spell the difference between adults who must work and those who can retire.

MANAGERS of charities, rubbing their hands over the coming transfers, are hoping for a double dipping of wealth: first, an infusion from the expiring parents; later, one from the inheriting kids. If even a few percent of boomers' potential inheritance went into private foundations, the amount would nearly double the $94 billion now on hand.

Late last year, Peter Goldmark, president of the Rockefeller Foundation, met with leaders of other major foundations at Pocantico Hills, the Rockefeller family's estate, to consider philanthropy's future. Most agreed a golden age of giving is just around the corner, made possible by the imminent demise of some 1,000 older Americans each worth $100 million or more.

"So No. 1," says Goldmark, "we have the wherewithal. It's supply driven: I personally know five donors who each could create Ford Foundation–size foundations tomorrow. And, whether you are liberal or conservative, there's a sense now that private initiative is preferable to state.

"What we don't know is what part of that inheritance is going to philanthropy, what part to *Internal Revenue*." His eyes narrow. "That's right . . . it's a race. Me on one side, the IRS on the other. OK. I'll hurl down the gauntlet to the commissioner. I'll write a letter: The IRS can beat us if it wants, but we've started. We're after the same thing. What's better for the country? Does this money belong in government's pocket? Or should it go to those *thousand points of light*? Hey, this could be quite a letter!"

Popcorn and United Way forecasters believe that charitable boomers will favor specific causes, such as finding a cure for AIDS, helping the homeless, and keeping Greenpeace in rubber rafts. And so far, boomers' attitudes toward charity do seem a little different from their parents' (see box).

As the 1990s progress, new claimants to boomers' patrimony will arise, drawn by the overpowering aroma of trillions of dollars. Everyone, surely, will want a cut. Some will have the goodness to ask for it; others will assert that boomers should be deprived of their inheritance bodily, through a revision to the tax laws, so the money can be used for social programs and replastering the infrastructure. Marketers who want their dip should pick their ladles now. F

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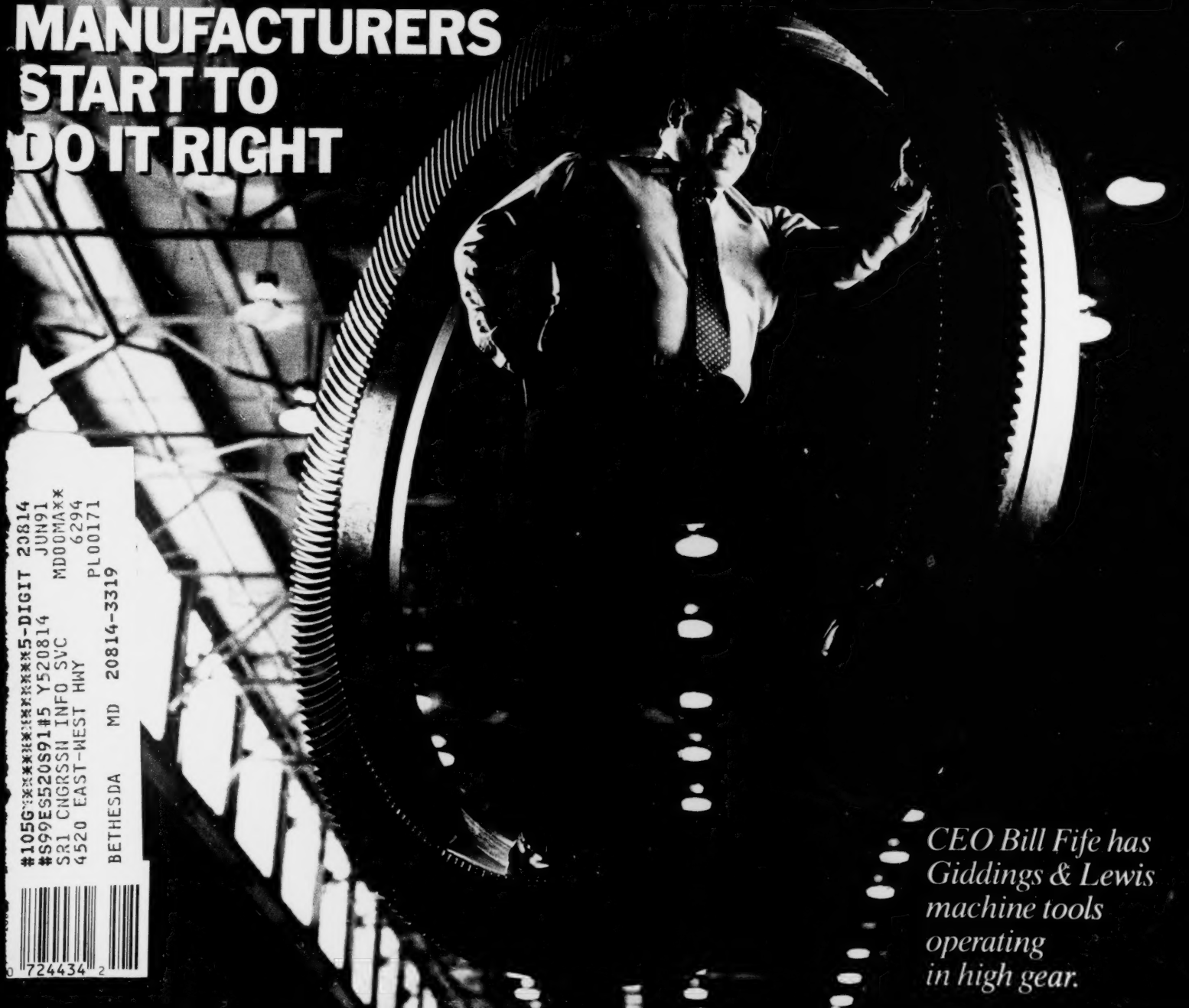

CEO Bill Fife has Giddings & Lewis machine tools operating in high gear.

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ABOVE: Michael L. Abramson photographed this worker, about to cut teeth into a gear for a Caterpillar axle.

COVER: William J. Fife Jr., CEO of Giddings & Lewis, photographed by Louis Psihoyos (Matrix) inside a ring gear in the company's Fond du Lac, Wisconsin, factory.

"I believe in total flexibility. A plant should be able to produce axles in the day shift and engine blocks during the night shift." PAGE 54

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"We have become the second leading manufacturing nation and are slowly becoming the third."

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"Inside information is not always a sure thing: I lost as much as $250,000 on some trades."

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"God has spoken."

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"The baby-boomers are finding out later what their parents knew—raising kids takes effort and causes worries."

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EDITOR'S DESK

YOU WILL FIND in this issue the gripping inside story of the demise of Drexel Burnham and its inside traders. It is a two-part morality tale that begins in song—Dennis Levine's decision to cooperate with the federal prosecutors—and ends in tears—Michael Milken's, after Drexel, the junk bond behemoth, subsides beneath a sea of bile and red ink.

Producing the dramatic Wall Street morality tale (clockwise from lower left): Connelly, Kirsch, Sherman, Autry, and Fromson

Here, for the first time, Levine—a one-time Drexel managing director—tells in his own words the story of his fall, which precipitated Ivan Boesky's and indirectly set Drexel wobbling (see page 80). Just after Levine was arrested in 1986, Stratford Sherman of FORTUNE's board of editors asked him to write his story for us. Sherman heard nothing more until late in 1989, when he returned home to a message on his answering machine: "This is Dennis Levine."

Why, following his release from prison, did Levine agree to set pen to paper? Sherman believes "it was because I expressed open-mindedness." While reporter Sandra Kirsch checked the story's facts, Sherman served as editor. "My job," he says, "was to draw him out—to make him recall the vivid anecdote, relive the tough emotion."

Equally dramatic is writer Brett Fromson's intimate account of the fall of Drexel (page 90). So much money fled so quickly from the firm's coffers that the Manhattan headquarters at 60 Broad Street all but imploded early this year. FORTUNE looks beyond these death throes to reveal their cause—a complex confluence of people and events that for years conspired to bring Drexel down. Says Fromson: "When you understand Drexel's internal dynamics and the longstanding animosity focused on it by Wall Street, FORTUNE 500 CEOs, and the federal government, you can see how the end could come so fast." Julie Connelly, who edited the story, says, "Drexel made enemies gratuitously along the way. Later, at the right moment, each put in his harpoon."

Fromson and reporter Ret Autry spoke with over 60 sources, many of whom previously had refused to talk to the press—former Drexel officers, high-level employees and customers, officers at other Wall Street firms, and former federal officials. Startling facts emerge: how customers kept buying Drexel's wares until two days before bankruptcy shut its doors forever; how Drexel's Peter Ackerman, whose prowess at raising hostile-takeover money had terrified many a CEO, took time out during his firm's struggles to be co-author of a book on the strategic uses of nonviolence.

Did Drexel believe it could tweak corporate America's nose indefinitely with impunity? Yes, says Fromson: Hubris had fogged its vision. "Sure, they expected they'd catch flak," he says. "They were just off by a power of ten."

Marshall Loeb
MANAGING EDITOR

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WHY SOME DO IT THE WRONG WAY

Most of America's business chiefs can think of several steps to improve U.S. manufacturing. On the whole, they see more trouble ahead—and a few bright spots. ■ *by Terence P. Paré*

ASK THE CHIEFS of America's largest companies why American manufacturing has declined over the past decade, and they'll give you a long list of reasons. A sizable minority say any decline is being reversed, but most don't dispute the premise. So who threw the overalls in Mrs. Murphy's chowder? CEOs round up many of the usual suspects. They blame poorly educated employees, a lack of capital investment, and the focus on short-term thinking they say Wall Street demands. A surprising number of bosses return a hefty share of the guilt to the in-box in the corner office. The number who assign responsibility for the competitive erosion to poor managers rivals the number who blame recalcitrant or inadequate workers.

These are among the findings of the latest FORTUNE 500 CEO Poll. Between April 2 and April 20, the opinion research firm Clark Martire & Bartolomeo questioned 200 chief executive officers of FORTUNE Industrial 500 and Service 500 companies.

Bosses think the ground is still firm in fundamental technology. Only 11% of CEOs feel that superior Japanese industrialists have an edge in basic research. Fewer than a third believe the Japanese have an important advantage in product development. Where America really lags, say 64% of CEOs, is in the lunch-bucket world of manufacturing.

Q **Among Japanese producers whom you consider superior to their U.S. competitors, in which one of these three areas do you consider the Japanese advantage most important?**

A

Manufacturing	64%
Product development	31%
Basic research	11%
Not sure	4%

Totals more than 100% because of multiple responses.

Some chiefs dissent. Fully 39% of CEOs deny that the U.S. has fallen behind in manufacturing over the past ten years. Says Allen F. Jacobson of 3M: "We did have a decline in the 1960s and 1970s caused by lack of attention to quality and complacency about productivity. But I think manufacturing is improving." Paul G. Schloemer of Parker Hannifin, the Cleveland maker of industrial equipment, concurs: "Manufacturing has gone through a revitalization in the 1980s. The U.S. will have a strong base in the 1990s."

But most of the chief executives would apparently agree with a study on manufacturing by the federal Office of Technology Assessment. Director John Gibbons writes in the foreword, "It was not part of the plan for the United States to fall to second rank, but that is what is happening." John McConnell of Worthington Industries agrees: "We have become the second leading manufacturing nation in the world and are slowly becoming the third."

One explanation may be found on the bosses' résumés. Only 32% of the chief executives of industrial companies have spent most of their careers in manufacturing, while 27% have shimmied their way up through finance and 25% through marketing. Allied-Signal's Edward L. Hennessy Jr. doesn't think the bosses' backgrounds explain America's manufacturing troubles. "It just doesn't work that way," he says. "The toughest guy I know is Red Poling at Ford—and he's from finance."

Q **In which part of your industry—finance, manufacturing, marketing, for example—did you spend most of your career?**

A

Manufacturing	32%
Finance	27%
Marketing	25%
Other	16%

Q **In U.S. industry in general, do you think professionals in manufacturing have as good career opportunities as those in marketing and finance, for example?**

A

No	50%
Yes	48%
Not sure	2%

Many of the chiefs think America fell out of love with manufacturing. Their favorite explanation, with a number of variations, is that Wall Street's to blame. In the Eighties financial engineers consumed as conspicuously as Roman emperors and rock stars. Wall Street had a fatal glamour. Says Robert D. Krebs of Santa Fe Pacific: "Everybody coming out of business school wanted to be an investment banker or a multinational marketing specialist." There was gold in the financial district, and no dirty fingernails. "Young people have been sucked into Wall Street by the balance-sheet-manipulation business and have been

"We did have a decline in the 1960s and 1970s. But I think manufacturing is improving."

ALLEN F. JACOBSON
Minnesota Mining & Manufacturing

HANS NEEMAN

Q **Few seem to dispute that U.S. manufacturing over the past decade has declined in quality and productivity compared with our major trading partners. Why do you think this has happened?**

A

It hasn't. Quality and productivity are rising.	39%
The labor force has shortcomings.	18%
Capital investment has been inadequate.	18%
Management focus has been on the short term.	17%
Management has shortcomings.	14%
Government regulation or tax policy has been misguided.	11%
Quality and productivity have not been emphasized enough.	10%
Other	16%

Totals more than 100% because of multiple responses

paid enormous sums of money for it," says Louis H. Pepper of Washington Mutual Savings Bank in Seattle.

John Burns of Vista Chemical suspects that the zeitgeist is shifting. Reason: "There may be a feeling now that these people who understand the numbers don't understand the company." L. E. Coleman of Lubrizol says, "Too many people are familiar with the numbers, but not enough with how things are made."

"We have become the second leading manufacturing nation and are slowly becoming the third."

JOHN McCONNELL
Worthington Industries

JAN STALLER

The question remains whether a manufacturing career has become more attractive in recent years. Half the CEOs say that manufacturing professionals face worse career prospects than do those in marketing, finance, and other fields. Says Arrow Electronics' Stephen Kaufman: "If enough financial executives go to jail, maybe we'll self-correct our way to getting better manufacturing executives. But for now, manufacturing is still seen as dark, dirty, and dangerous."

Wall Street, say many of the CEOs, also forced manufacturing managers into poor decisions. Nearly a fifth of the chiefs criticized management's short-term focus, some of it forced, they say, by investors' quarterly earnings demands. Says Kaufman: "The emphasis in American management is on making the quick buck, and that leads to avoiding long-term investments, either in product development or in manufacturing processes."

Not every competitive field has been surrendered to foreigners. Bright spots on the darkling plain include the computer industry, which 28% of bosses think is America's best world competitor. One-fifth of CEOs feel that the aerospace, aviation, and aircraft manufacturers are still worldclass. The bosses believe America's weakest competitors by far are the automakers. Fully 52% picked U.S. carmakers as international lightweights. The lapse in electronics—more than one in five CEOs tag it as a poor performer in the global market—disturbs Lubrizol's Coleman. He asserts, "If we ever go to war again, we will have to depend on our opponents for our weapons."

Bosses see a heap of other causes for the decline of manufacturing, and chief among them are the shortcomings of the labor force and inadequate capital investment. The labor issue troubles Dwight L. Carlisle Jr. of Russell, the textile and apparel maker: "The educational level of U.S. workers has dropped drastically, and they are unable to operate modern equipment without additional company-provided education." Adds James R. Eiszner of CPC International: "I attribute a great deal of the problem to the deficiencies in the education system, which result in a lack of skills and motivation."

Gene Cartledge of Union Camp disagrees. He says, "Given meaningful things to do, design that makes sense, and modern equipment, American workers are second to none." He's blaming management, along with 14% of his peers. Says B.F. Goodrich's John D. Ong: "In those industries where the Japanese are superior to us, they have paid greater attention to participatory management in factories and have a more highly educated and skilled factory management staff." Emmanuel Kampouris of American Standard is particularly hard on those at the very top: "The problem has been the lack of focus on manufacturing and quality in the boardroom. Senior management doesn't appear to care about the manufacturing process as much as it does about financial and marketing matters. And senior manufacturing executives are rarely represented at board meetings."

"If we ever go to war again, we will have to depend on our opponents for our weapons."

L. E. COLEMAN
Lubrizol

Q **Which U.S. manufacturing industry do you think looks best compared with its global competitors? Which looks worst?**

A

Best	
Computers	28%
Aerospace	20%
Worst	
Auto	52%
Electronics	22%
Steel	14%

Inadequate capital investment is a villain in the eyes of some CEOs. They say it arises partly from the country's pervasive short-term vision—why make investments that will take ten years to pay off?—and partly from capital's high cost. Says Allied-Signal's Hennessy: "We've got to begin to take the long-term view, boost capital investment—we are running at half the rate of Japan—and find a way to reduce the costs of borrowing." The Federal Reserve Bank of New York reports that from 1980 to 1988 the cost of capital for a factory with a 40-year life was consistently higher in the U.S. than in Japan, sometimes by more than six percentage points.

Every CEO seems to think the U.S. should commit itself to fight hard to regain world preeminence in manufacturing. Many believe it is already on the road back. But they see plenty of reasons why it will be a long, tough slog. F

HOW TO CLOSE THE HEALTH CARE GAP

Millions of Americans aren't insured, and many are losing protection because employers can't afford it. The industry and politicians are in a race to fix things. ■ *by Edmund Faltermayer*

IF YOU THINK your company's medical costs are off the fever charts, listen to Harry Featherstone. He's president and CEO of Will-Burt, an Orrville, Ohio, fabricator of automotive parts that employs 300. Will-Burt's health insurance premiums have nearly *quadrupled* in the past three years and now stand at $315 a month for a family, including the worker's 25% contribution. "We just can't afford this," fumes Featherstone, who worries about his ability to pass such costs along in the prices he charges customers.

Mid-Cities Honda, a motorcycle dealer in Paramount, California, endured even steeper increases—to $360 a month—as it bounced like a pinball among five insurers in ten years. The first carrier went bankrupt, leaving a worker liable for $8,500 in unpaid medical bills. Because one of the 18 current employees has Addison's disease, a malfunctioning of the adrenal glands, several insurers turned down owner Diana Slumskie before one agreed to take on the company.

At least everybody is fully covered. Less fortunate is George McAmis, 58, general manager of Stanford Glass Blowing Laboratories, near the university of the same name. He has undergone angioplasty, and the insurer of his five-person outfit stands ready with protection, except where it is needed most: for his heart condition, which is specifically omitted. The anxieties of such people, and of the self-employed, who often pay $1,000 a month to cover a family headed by a healthy male in his 50s (when they can find medical insurance of any kind), are material for a stadiumful of Franz Kafkas.

All of which should sober up those who are impatient to see health insurance extended to everybody. It's hard to be against protecting 33 million fellow citizens who have no coverage at all, especially when the U.S. is the only Western industrial power that leaves a large portion of its people ex-

For Diana Slumskie (center), the perils of keeping workers insured at her California dealership make motorcycle racing look like a quilting bee.

ALAN D. JERNIGAN

MICHAEL GREENLAR PICTURE GROUP

A new, cheap, stripped-down plan protects the Cavallo family.

posed to calamitous medical bills. But how to do it? State governments as well as the feds are devising megaplans to address the problem, leading insurers—frightened of what the politicians might dream up—to advance their own proposals. Nearly all the plans would help the unemployed through a beefed-up Medicaid. The battle is over how to help the far greater number of the uninsured who work for small companies, where coverage is eroding for those already protected. The way that issue is eventually resolved—and some sort of legislation looks likely—will affect the competitiveness of American industry and the health care costs of all U.S. companies, large and small.

The trouble is that small employers, ranging from beauty salons to Silicon Valley startups, pay dearly for policies that may be drilled full of exclusions—and they can encounter shocks. The monthly bill jumped more than fourfold at Forbes Consulting Group, a market research firm in suburban Boston, after a worker needed treatment for lymphatic cancer. Last year New York Life announced it would drop a group of employers that included an Oakland, California, software company called Soft Press. Erica Zeidenberg, one of two employees along with her husband, was pregnant at the time; the insurer offered them two substitute plans that would have been far more expensive than the original. Luckily, her baby arrived just four days before the old coverage ceased. It is hard to expect struggling entrepreneurs to offer medical benefits if the cost is both unaffordable and unpredictable. Nor does it do much good if the insurance policy promises life jackets to all but those who cannot swim.

How did we get into this mess? Because of brokers' commissions and higher administrative costs, small companies have always paid 15% to 20% more than big corporations for the same package of health benefits. But as medical costs have exploded nationwide, little outfits have been the victims of buck-passing. First the government's Medicare and Medicaid programs for the elderly and poor began tightening up on reimbursement of hospitals and doctors. Now giant corporations are starting to rein in health expenses with so-called managed-care techniques (FORTUNE, April 23). To make up for pinched revenue elsewhere, says Francis Miller, president of the Colorado Business Coalition for Health, hospitals and physicians are shifting costs to small business.

Exacerbating the problem, some insurers have distributed this ballooning burden unevenly among little firms. Practicing what they call risk selection, they aggressively cherry-pick the market by offering relatively low premiums to firms with young and healthy workers. Other employers pay much stiffer rates—up to eight times as much—or get the cold shoulder. Many carriers redline whole occupations rated as poor health bets, such as structural ironworkers (who risk falling), cosmeticians (exposed to chemicals on the job), restaurant employees (deemed a casual, sickness-prone lot), and those who work in motorcycle shops (ditto). Instead of spreading risks, the private insurance system has been shedding them.

The market was not always so chaotic. Health insurance in the U.S. began in the Thirties with Blue Cross and Blue Shield, nonprofit outfits started by hospitals and doctors. The Blues took all comers, big and small, at so-called community rates: To distribute the burden evenly across the entire population, they charged all employers in a region the same premiums regardless of their workers' ages or medical histories.

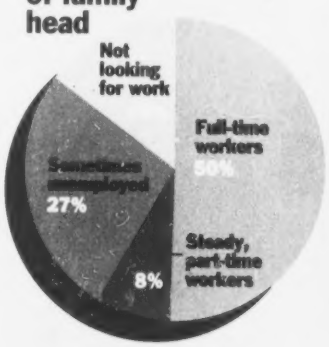
This system still prevails in a few cities, most notably in Rochester, New York, where the business leadership and the Blues have worked hard to keep it. But elsewhere community rating started to come apart in the Fifties and Sixties, when commercial insurers snatched business from the Blues by offering lower prices to companies with healthier work forces. If young joggers predominated at your company, the sales pitch was hard to refuse. Why pay rates that subsidize somebody else's workers who are older, sicker, and flabbier?

To stay competitive, the Blues abandoned community rating in most places. Even health maintenance organizations like Kaiser Permanente, which long believed that its social mission was to offer the same price to all, have reluctantly begun to tailor their premiums. Kaiser draws the line at practices that have given health insurance a bad name among small-business men. Says Chairman James A. Vohs: "We don't kick out small groups, even if your grandmother gets sick and comes on the payroll."

The ranks of the uninsured are growing, for reasons that go beyond risk selection. More workers toil in low-wage service or temporary jobs that pay no fringe benefits. Because of

33 MILLION WITH NO HEALTH INSURANCE

Work status of family head



Family income

Over $30,000	22%
$20,000–$29,999	17%
$10,000–$19,999	31%
Under $10,000	30%

SOURCE: EMPLOYEE BENEFIT RESEARCH INSTITUTE

Who's caught in the crunch: New Census Bureau data for 1988 show that half the uninsured are full-time workers and their dependents. Some are far from poor.

budget constraints, the federal-state Medicaid program finances health care for only 40% of those below the poverty line, vs. 65% in the mid-Seventies. Among Americans younger than 65 and thus ineligible for Medicare, says Katherine Swartz of the Urban Institute, about 18% lack health insurance, compared with 13% in the late 1970s.

Why not scrap the hodgepodge U.S. health insurance system and start over? According to the Noble Lowndes benefits consulting firm, medical costs have mounted to nearly 14% of payroll for all companies; in firms paying low wages the cost can easily surpass 20%. Some business executives have begun yearning for government to take over this obligation. "The frustration level is growing," says Karen Berg Brigham, manager of health care policy for the U.S. Chamber of Commerce. "People with an innate mistrust of government have begun to say that national health insurance may not be a bad idea."

BARTH FALKENBERG

Scorched by health costs: Ohio parts maker Harry Featherstone

The most alluring model is in Canada, where the government pays doctor and hospital bills for everybody, and medical expenses are a lower percentage of GNP. Such a system has no more chance in the U.S. Congress than a polar bear in the Everglades. Business lobbies like the Chamber of Commerce are strongly opposed. The extra tax burden would be hundreds of billions a year. Carson Beadle, a managing director of the William M. Mercer benefits consulting firm who hails from Canada, has another objection: "Up there the health budget has to compete with the military, highway spending, and everything else." And while nobody has to worry about paying, you can wait a long time for care.

The grand designs coming out of Washington would plug the holes in the U.S. health insurance system. While the bells and whistles vary, most of the proposals follow the same basic principles. An expanded Medicaid or successor system would handle the poor and the jobless. Employers would be *required* to cover the two-thirds of the uninsured who are workers or their dependents, with premiums for the near poor subsidized by the government.

Among the most prominently sponsored proposals are virtually similar bills from Senator Edward Kennedy of Massachusetts and Representative Henry Waxman of California, both Democrats, making health benefits obligatory. A commission headed by Democratic Senator John D. Rockefeller IV of West Virginia has called for an employer mandate with a wrinkle: a dual option similar to the "play or pay" law that takes effect in Massachusetts in 1992. Employers could comply by buying health insurance, or they could pay a fixed percentage of payroll into a government-financed health plan.

Business naturally hates these proposed requirements and always has. A recent survey by the National Federation of Independent Business, whose members employ ten workers on average, shows that a third pay no health benefits. Half of that third said they would cut jobs, trim hours, or close their doors if forced to provide coverage. Says Deborah Steelman, who advised candidate Bush on health policy in 1988 and heads one of Washington's study commissions: "Mandating insurance is a nonstarter politically."

Maybe in Washington. But in state capitals it is building power. Hawaii already has a mandate, and in California the idea of a state takeover of health insurance is so politically strong that a group of major insurers, hoping to offer a more attractive alternative, has accepted the notion of an employer mandate.

ELSEWHERE AS WELL, the insurance industry is trying to fend off heavy-handed political solutions with proposals of its own. The boldest comes from Robert Laszewski, executive vice president of Liberty Mutual in Boston, who would require community rating for all businesses with fewer than 100 employees. Insurers serving an area would be required by law to sign up any small outfit seeking coverage. Such rules, Laszewski says, would have a favorable side effect: They would transform insurers into watchdogs over medical expenditures. "We must drive insurance companies to compete on the basis of which can best manage their customers' health care dollars," he says, "not which can churn business and find the cream most effectively."

Among commercial insurers, reactions to this idea range from applause to apoplexy. Big carriers, because of their size, could survive and even prosper under community rating. At the other extreme are some small insurers with limited pools of enrollees, which could go bankrupt if they attracted more than their share of the sick.

In the middle, with the job of crafting a consensus in a 320-member organization almost as fractionated as the new Hungarian Parliament, is Carl J. Schramm, president of the Health Insurance Association of America (HIAA). In February the group agreed on a general set of principles that would fundamentally change the way insurers serve companies with 25 or fewer workers. The plan requires federal and state legislation to make the whole industry play by the new rules, and Schramm puts the chances of passage at better than fifty-fifty within three or four years. Connecticut, home to some of the biggest carriers, is considering a bill that would usher in similar reforms, and a committee of state insurance commissioners is drafting model legislation with a similar thrust. So the HIAA plan is worth a close look.

No employer would be denied coverage, even if half of those on the payroll tested HIV-positive. For such workers and for others with serious preexisting illnesses, benefit payments could not be delayed beyond a one-year waiting period. Once on board the in-

REPORTER ASSOCIATE *Rosalind Klein Berlin*

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surance system, neither a company nor one of its workers could be dumped, no matter how high the medical bills. Employees with serious illnesses could stay covered without interruption if they switched jobs—a change from today, when thousands are chained to jobs they hate for fear of losing benefits.

Insurers could still vary premiums widely by industry and the age mix of a small group's work force. But the HIAA reforms would narrow the range of premiums and rate increases. Whatever a company's subsequent claims experience, its premiums would never exceed those of similar age and occupational groups by more than 50%. To make sure no insurer bled financially from taking an outsize share of the ill, all the carriers would pay assessments to a newly created reinsurance system—a kind of insurer's insurer—to pay the bills for the serious cases.

Insurers have at last realized that the health insurance mess is a market opportunity.

Assuming this elaborate mechanism succeeds, lowering the costs for some sickness-prone companies would obviously mean raising them for others. But the rise in premiums for healthy groups, says Richard Hill, vice president for small business and individual health insurance at Prudential, would be "just a few percent."

In one stroke the HIAA is offering guaranteed coverage to an estimated ten million uninsured American workers in tiny firms and their families. Moreover, says Schramm, the reform package would "stop the unraveling" of insurance for those who have it.

BUT SOME EMPLOYERS still won't be able to afford the product because medical costs are rising so fast—about 9% a year. The best eventual answer to that problem is a statistical research effort, just getting into high gear in the health establishment and government, to determine which medical procedures and tests are worth the cost and which could be dropped. But in the meantime, business can bargain-hunt in health care as zealously as it does when buying raw materials and parts. In cities such as San Diego, Seattle, Chicago, and Denver, coalitions of small and big companies have won impressive discounts from groups of doctors and hospitals.

In addition, insurers have at last realized that the health insurance mess is a market opportunity. The Blues have rolled out new low-cost health plans designed to reach the uninsured. ValuMed, a stripped-down package of benefits at about half the usual premium cost, is aimed at low-income families in the Rochester area without employer-paid benefits, such as Denice and Anthony Cavallo and daughter Christa (see photo). Only 360 families and individuals have bought policies, far fewer than hoped. Bigger expectations are riding on a Virginia plan for employers that provide no coverage. For this package only, the legislature has just waived the list of state-required treatments that normally must be included in health insurance plans. The Virginia plan goes on sale soon, and nearly half the target employers say they are interested.

A COMMERCIAL INSURER has already found that if the product is cheap enough, employers will go for it. Last summer in Denver, United States Life began selling one of nine health plans designed for the uninsured with the help of the Robert Wood Johnson Foundation. Total premium for the plan, which enjoys hefty hospital discounts: $118.10 a month for a family headed by a parent under 30. Scope, as the plan is called, is limited in scope like any low-cost plan that insurers are able to devise under today's medical inflation and their industry's ground rules: Certain occupations and severe preexisting illness are excluded. Moreover, about 42% of the 600 small firms signing on already had insurance and merely switched to Scope as a cheaper alternative. Nevertheless, says senior vice president David Dunn of United States Life, the response has been "truly extraordinary."

These are only pieces of the answer for the uninsured. Slowly but irreversibly, momentum is building for a more ambitious solution, and business is showing new interest in hammering out a consensus. Twenty-seven companies, including Ford Motor, AT&T, Kodak, and 3M, have just joined several unions and other organizations to form the National Leadership Coalition for Health Care Reform, which hopes to produce its own blueprint next year. The answer may ultimately have to be a law requiring all companies to buy health insurance for employees. But with insurers willing to go a long way toward making it more affordable, a government mandate now would be premature. F

THE HUNT FOR THE GLOBAL MANAGER

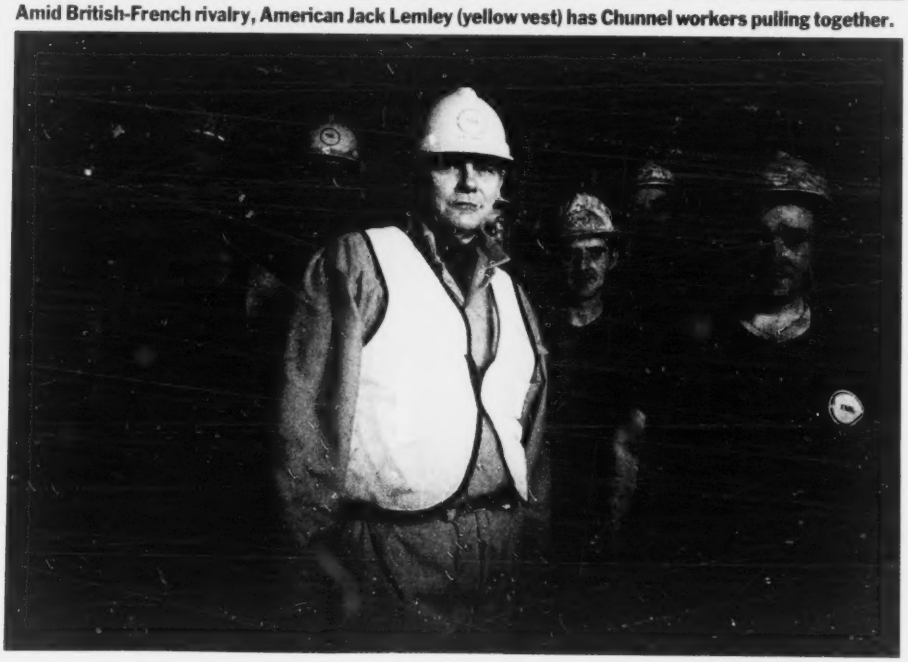
Good at languages and not overly bothered by jet lag? Your phone may ring soon. Headhunters are scrambling for executives who know how to do business across borders. ■ *by Shawn Tully*

JAN PRISING is a Swede who runs an American-owned company out of an office overlooking Lake Varese in Italy. He speaks five languages—but not Italian—and conducts most of his business in English. Is he unique? Not anymore. Prising, 51, is a corporate Viking, part of a growing cadre of executives who can manage across borders. Nor is the way he got his job so unusual, though it would have been a scandal only a few years ago. A headhunter lured Prising, a 21-year veteran of Sweden's Electrolux, by offering salary and bonuses that could reach a very un-European $500,000 a year.

The hunt for the global manager is on. From Amsterdam to Yokohama, recruiters are looking for a new breed of multilingual, multifaceted executive who can map strategy for the whole world. The action is especially heavy in Europe. To prepare for the wide-open world of 1992, companies are pushing out their traditional managerial corps of stodgy engineers and aristocrats. For replacements, they have turned to specialists they once haughtily ignored, executive search firms. And the headhunters have turned to U.S. multinational corporations as the most fertile hunting ground.

The market for executive search is exploding. According to a study by Economist Publications Ltd., the London-based financial publishing firm, the net revenues of Europe's dozen biggest executive search firms have been climbing more than 15% a year, reaching almost $300 million in 1989. And that's just the beginning. Says Lester B. Korn, chairman of the world's biggest executive search firm, U.S.-based Korn/Ferry International: "Europe will be the world's fastest growth market of the 1990s, outperforming even the Pacific Rim."

Amid British-French rivalry, American Jack Lemley (yellow vest) has Chunnel workers pulling together.



Europe's headhunters are just as glamorous, highly paid, prestigiously educated—and at least as cosmopolitan—as the candidates they're paid to track down. One Swiss giant and four mainly U.S.-based competitors dominate the industry (see chart). The leader in Europe, and the third-biggest search firm in the world, is Zurich-based Egon Zehnder International. About 70% of Zehnder's $80 million in revenues comes from Europe. Run by founder Egon Zehnder with the low-key efficiency of a private Swiss bank, the firm ranks first or second in most big European markets, including France, Italy, Switzerland, Belgium, and West Germany.

While Zehnder is pushing to expand its small U.S. business, the company's rivals are using their strong bases in the U.S. to attack Europe. The most European is Spencer-Stuart, a solid old-line firm that is owned equally by partners in North and South America, Europe, and the Far East, and derives 36% of its $80 million in revenues from Europe. Cultivating a swankily aggressive image is the world's second-largest firm, Russell Reynolds Associates Inc., with revenues of $85 million according to *Executive Recruiter News*. A powerhouse in financial services in London, the firm has chauffeur-driven Jaguars shuttle clients between the City of London and its stately offices in Saint James Square.

The two fastest-growing firms—Heidrick & Struggles and Korn/Ferry—are winning new business all over Europe. Heidrick & Struggles, low-key and Continental in style, has surged from virtually nowhere in 1985 to generate European revenues of $21 million. It is No. 1 in France. Korn, which takes the hard-nosed American approach to the business, runs its European operations from Brussels. The company stumbled badly in Europe before hitting its stride in 1985. Chairman Korn has grand plans for Europe. He wants to quadruple

PHOTOGRAPHS BY SERGE COHEN

Dean of Europe's headhunters is Egon Zehnder. He sometimes drives from his seven-bedroom home to his Zurich office (rear) in this 1951 Mercedes 170-S.

European revenues to $100 million by 1995.

The executive search boom came first to Britain because of financial deregulation and industrial restructuring that created strong demand for managers with a knack for cutting costs. The focus then shifted to the Continent. Northern Italy is in the midst of an industrial renaissance that has spawned companies hungry for European expansion—and managers who understand foreign markets. "Increasingly executives have a responsibility for more than one country. The key is the ability to see how each decision affects the rest of the European chessboard," says Philippe De Backer of Carré Orban & Partners International, a hot European-based recruiter. The fastest growth is in West Germany, where headhunting was illegal until the late 1970s.

REPORTER ASSOCIATE *Shelley Neumeier*

TOP FIVE IN EUROPE

Company	Revenues (in millions) Europe	Total
1. Egon Zehnder International	$55.0	$80.0
2. SpencerStuart	$28.6	$79.7
3. Russell Reynolds Associates	$28.0*	$85.0*
4. Korn/Ferry International	$26.1	$103.3
5. Heidrick & Struggles	$20.6	$66.8

*Estimate

Experience with other companies is increasingly prized. "Today it's essential for a 45-year-old marketing manager to have had several jobs," says David Kimbell, worldwide chairman of SpencerStuart. Thorn EMI, the British music, software, and appliance rental company, transformed a stuffy management accustomed to lifetime employment into a far more daring—if less stable—team of entrepreneurs. From 1983 to 1988 the company replaced about 130 of its top 150 managers, at least half through headhunters. Today the average executive is 44 and has had three previous jobs, vs. none eight years ago. Says personnel director Don Young: "I expect senior executives to commit to about five years."

According to headhunters, the best cross-

border managers started out with U.S. multinationals. Says Baldwin Klep, a partner at Heidrick & Struggles: "More than 50% of the executives I place in Europewide positions came directly from U.S. companies."

Zehnder's search last summer for a new chief executive for Transmanche Link, the Franco-British construction consortium building the $12 billion tunnel under the English Channel, ended in Nepal with American Jack K. Lemley, 56. The onetime Morrison Knudsen Corp. executive was a consultant on a hydroelectric project outside Katmandu. The Chunnel's construction has been plagued by cost overruns and bickering between Transmanche and the owner, Eurotunnel. Transmanche wanted one of the world's best project managers—in a hurry.

MAURO VALLINOTTO

A headhunter bagged Jan Prising, here in his Whirlpool office near Milan, at a moose hunt in Sweden.

A strapping 6-footer with a bruising handshake, Lemley unwinds practicing white-water rafting from Colorado to New Guinea. His résumé reads like a glossary of the world's most ambitious construction projects, including a 13.5-mile water tunnel under Manhattan in the early 1970s and a segment of Saudi Arabia's $7 billion King Khalid Military City a decade later.

Lemley wins praise from both Eurotunnel and his own employees by vastly improving coordination between the separate French and British construction crews. The project is on schedule for completion in 1993. "It's an advantage to be a third nationality," says Lemley. "Unlike a British or a French manager, I can't be accused of taking sides."

The new marketing manager for Cadbury-Schweppes PLC's European beverage operation is Joost Pabst, 38, a Dutchman recruited by Egon Zehnder from Colgate-Palmolive Co. in New York City. Until recently Cadbury operated its $650 million European soft-drink business as a collection of national subsidiaries. As a result, its Schweppes brand had radically different pricing and advertising in different markets. The Germans saved their expensive tonic for special occasions, while the Spaniards downed it as a summer thirst quencher.

Pabst, based in Barcelona, is creating a single image for Schweppes in Europe, that of a classy but popular soft drink. "What sold me on this job was the chance to manage brands Europewide," says Pabst. "Sure, there are differences in tastes. But they're not as big as people think. We're doing everything possible to achieve economies of scale by exploiting the similarities between markets."

The successful hunt for Jan Prising illustrates how restructuring is driving the new recruiting surge. Last year Whirlpool Corp., the U.S. appliance maker, paid $470 million for a 53% share of the $2-billion-a-year European appliance business of Dutch electrical giant N.V. Philips' Gloeilampenfabrieken. To find someone to run his new unit, Whirlpool CEO David Whitwam turned to Roddy Gow, the managing director of Russell Reynolds's London office. After a three-continent search, Gow finally got Prising in his cross hairs—as well as some moose—during a hunting party sponsored by Russell Reynolds.

A headhunting spree has produced a United Nations of sorts in the Paris headquarters of Alcatel. Says human resource manager Paul Claudell: "We don't want French domination." The joint venture of Cie Générale d'Électricité and ITT Corp. includes CGE's telephone businesses and ITT's European operations. The company is out to win a big share of the emerging pan-European market for telecommunications equipment. Of the 120 top executives in Paris, 60% aren't French.

Alcatel's finance department is motley: an Italian, a Swede, a Portuguese, a Dutchman, and a Belgian, all recruited in the past two years by firms such as Korn/Ferry and Egon Zehnder. The Swede, 32-year-old Harald Bauer, was plucked from a top finance post at a large Swedish trading company to become controller for Alcatel's subsidiaries in Scandinavia and parts of France. "Having a Swede in this job definitely improves communications," says Bauer. "The management here is still very French and hierarchical. With the mix of nationalities, that should change quickly."

NO ONE IS ENJOYING the hard-won respect of executive searchers more than Egon Zehnder. The tall, balding Zehnder, 60, looks like a sober-suited banker but exudes the gusto of an entrepreneur. A father of five, he lives in Zurich in a seven-bedroom house furnished with 18th-century French antiques and equipped with an air-conditioned wine cellar. There is a swimming pool behind the house, but Zehnder would not dream of swimming a lap. His prescription for good health is typically offbeat: Avoid exercise. "It's basically unhealthy and stressful," he says. "Just look at those skiers with their wheezing, unhappy faces!"

Scion of a prominent Zurich family, Zehnder earned a law degree at the University of Zurich and then headed for the U.S. and Harvard business school. On his way, he spent a few days traipsing around Manhattan, vainly using his broken English to try to sell Swiss candles to Macy's and Saks Fifth Avenue. The next summer Zehnder sold kitchen knives door-to-door in Los Angeles, working nights as a stevedore.

After graduating in 1956, he worked briefly for advertising agency McCann-Erickson in New York City, returning to Europe in McCann's Düsseldorf office. In

ADAM LUBROTH

Hunted: Joost Pabst now markets Schweppes out of Spain.

1959, Zehnder accepted a personal offer from Spencer Stuart to open his first executive search office in Europe. "I knew Stuart was onto something," says Zehnder. "The executives working for my advertising clients were mostly unqualified pseudo-aristocrats who owed their jobs to family connections."

He ran into plenty of resistance in those early days. He usually found his mailbox filled with threatening letters from companies whose executives he'd tried to recruit. He says, "I kept telling the presidents and personnel managers that if you believe in competition for products, why not for senior executives?" Zehnder quit to form his own firm in 1964. Says he: "Stuart wanted to throw cocktail parties and press functions, to do things the U.S. extrovert way. I knew if I behaved discreetly and professionally, search would eventually be accepted in Europe."

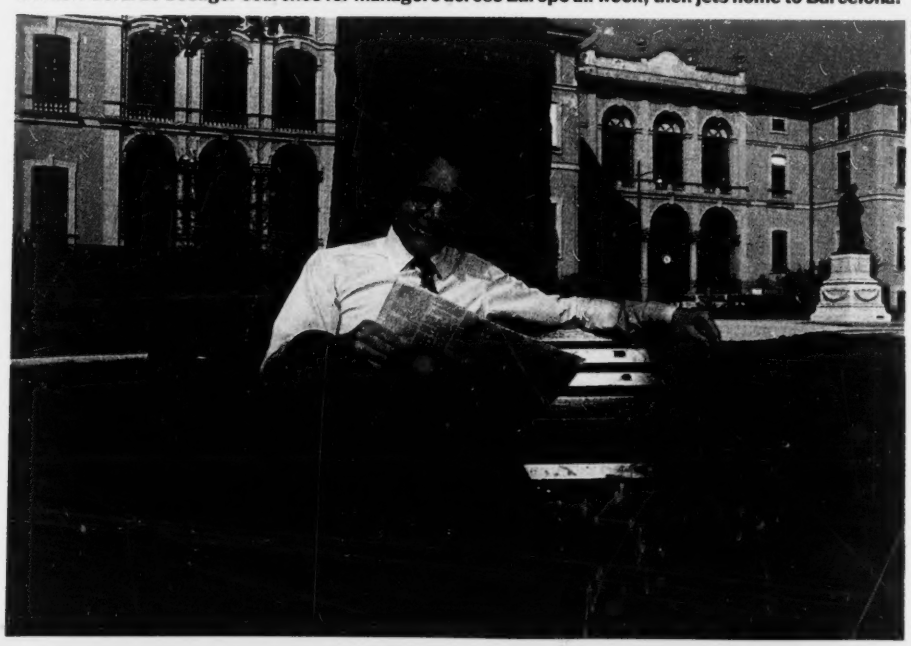
FROM THE START, Zehnder used his recruiting skills to staff his own firm. For Europe, he hires Europeans and Americans in their early 30s who have earned MBAs from the best U.S. business schools or top international institutions such as Insead in France. A recent recruit is Erik Slingerland, 34, a Dutchman with a law degree from the University of Zurich and an MBA from the University of Virginia. He was hired from Swiss pharmaceuticals company Ciba-Geigy—where he worked as a controller in Brazil and Switzerland. Slingerland speaks French, German, English, and Portuguese, as well as Dutch. Says he: "Egon convinced me that we were as important to clients as other professionals such as lawyers."

More to the point, the business is fabulously lucrative. Zehnder, like all the other big firms, never works on contingency. For each assignment, the company charges a fixed fee, depending on the number of offices, consultants, and hours needed to carry out the search. Assignments range from finding $80,000-a-year marketing managers for local subsidiaries of multinational companies to recruiting chief executives earning $1 million or more. For a typical four-month assignment—finding a $250,000-a-year chief financial officer for a big West German company—Zehnder would charge between $80,000 and $120,000. All of the firm's 67 partners, including Zehnder, are equal shareholders. Each year the partners split up as much as $15 million in bonuses and dividends. Amazingly, the money is divided not according to performance but based on seniority. Partners with 15 years or more of service earn up to $600,000 per year, while new partners in their late 30s make about $200,000.

Since compensation isn't related to billings, Zehnder says, colleagues in different offices work together smoothly instead of squabbling over how to divide fees. Turnover is low. But many competitors are unconvinced. "Zehnder's system is absolutely crazy," says Gerard Clery-Melin, the Frenchman who heads Heidrick & Struggles Europe. "It encourages people to do nothing. We have fights, tension, and turnover—it's healthy. Stability is not as important as Zehnder thinks."

Like the candidates they're seeking, the Euro-headhunters now operate across Europe rather than in separate national markets. Heidrick & Struggles reckons that revenues from Europewide assignments—almost nil a few years ago—now account for 15% of European billings and are increasing at 40% a year. The firm has established a group of eight consultants in Europe who work exclusively on international assignments. Each consultant handles a search in its entirety, interviewing candidates wherever they live.

Hunter: Gerardo Seeliger searches for managers across Europe all week, then jets home to Barcelona.



MAURO VALLINOTTO

THE DASHING new image of the Euro-headhunter befits Russell Reynolds veteran Gerardo Seeliger. A handsome 42-year-old Spaniard with an economics degree from West Germany's University of Freiburg, Seeliger competed on the 1972 Spanish Olympic sailing team alongside his close friend King Juan Carlos. He served as marketing director of West German sporting goods maker Adidas in the mid-1980s. Such hands-on experience is a must for handling international searches, a niche he helped create in Reynolds's London office. Seeliger typically spends part of each week in London, Paris,

Frankfurt, and Milan—where he speaks all the local languages—and jets home to Barcelona for weekends.

For Seeliger, the big challenge of the 1990s will be overcoming a severe shortage of Euro-managers. He says the problem isn't the attitude of the gung-ho young executives: "Managers in their 30s are totally different from their fathers. They're hungry; they'll move to a new European city tomorrow." Rather, it's that few companies—even globe-trotting Dutch or Swedish ones—systematically develop international managers by rotating young executives through a series of foreign assignments.

Finding—and training—the best cross-border managers will be crucial to reaping the benefits of 1992. Headhunters will be indispensable. Seeliger, in fact, plans to open his own consulting business to find and train managers for Eastern Europe. But the future belongs to companies that not only find the whiz kids but also hang on to them. The winners will be companies that stop paying lip service to 1992 and prove they believe in it—creating the exciting, cross-border jobs that tomorrow's Euro-managers will thrive on. F

THE SWITCH IS ON IN JAPAN

Lifetime employment in Japan is unraveling, which is wonderful news for headhunters. When the boss of a Tokyo software company opened the door of his design department a few months ago, he found the room deserted. The entire department had been recruited by a rival company. In a recent survey, a record 38.5% of Japanese managers between ages 20 and 39 said they were thinking of switching jobs. Executive search firms have sprung up accordingly. The number in Tokyo has risen from about 50 to more than 250 in the past five years. Japanese headhunters control 90% of the business, serving both foreign and local companies desperate for qualified managers. But the international firms, which arrived about ten years ago, are also enjoying a booming business.

Traditionally, Japanese companies hired grads of the top universities and hung on to them forever. Now that so many companies are expanding overseas or diversifying into new businesses, they can no longer depend on this system to provide the right people in all circumstances. The taboo against hiring executives from other companies is breaking down.

Kawasaki Steel, for example, is using headhunters to fill management jobs in its new electronics division. "Since we expect our new business to take at least ten years to get established, we'll be depending on headhunters for some time in the future. It's more efficient," says a Kawasaki executive. An executive for a large office equipment company adds that his company has used headhunters to find administrators and accountants, particularly those who know English, to handle overseas accounts.

Loyalty is diminishing. Says Megumi Fujii, who left Nomura to found his own executive search company: "What employees expect from the company has changed. If they don't get things like vacations, good promotions, good pay, they will switch their loyalty if they get the opportunity." Adds Setsuko Egami, editor of *B-ing*, one of Japan's fast-growing job-placement magazines: "The virtue of work used to be its own reward. Now the virtue of work is money. This doesn't mean that Japanese aren't continuing to work hard and produce good work. They do. They just don't bother about which company as much."

Even bureaucrats can be lured from their posts, according to Seiro Takehara, president of IMCA, one of Japan's oldest executive search firms. Says he: "Their loyalty to country is dwindling. They are more interested in enhancing their work experience and their salaries."

Headhunting in Japan is also becoming multinational. Takashi Kurisaka, a partner at Egon Zehnder International in Tokyo, recently was asked to find a top European designer for a major Japanese automaker. "They could have bought designs from a European firm," he says, "but they wanted the designer to work with all their departments. They wanted someone who would inject a new vision." Zehnder found a French designer working in West Germany and brought him to Japan.

Still, says Kurisaka, executive search has not been totally accepted in Japan. Says he: "People are still brand conscious. Joining Mitsubishi Bank provides social prestige. I've had people say they will consider a switch after they marry off their daughter."

TAKESHI YUZAWA

Kurisaka at work: finding a French car designer in Germany

Perhaps the biggest change in attitude can be measured by the response Japan's headhunters get when they call a prospect. Says Yoshiyuki Okamoto, president of Cambridge Corp., a leading executive search company in Tokyo: "A few years ago we were treated like buzzing flies, a real nuisance. Today people only act flattered." **- Carla Rapoport**

SPECIAL ISSUE

SPRING 1990

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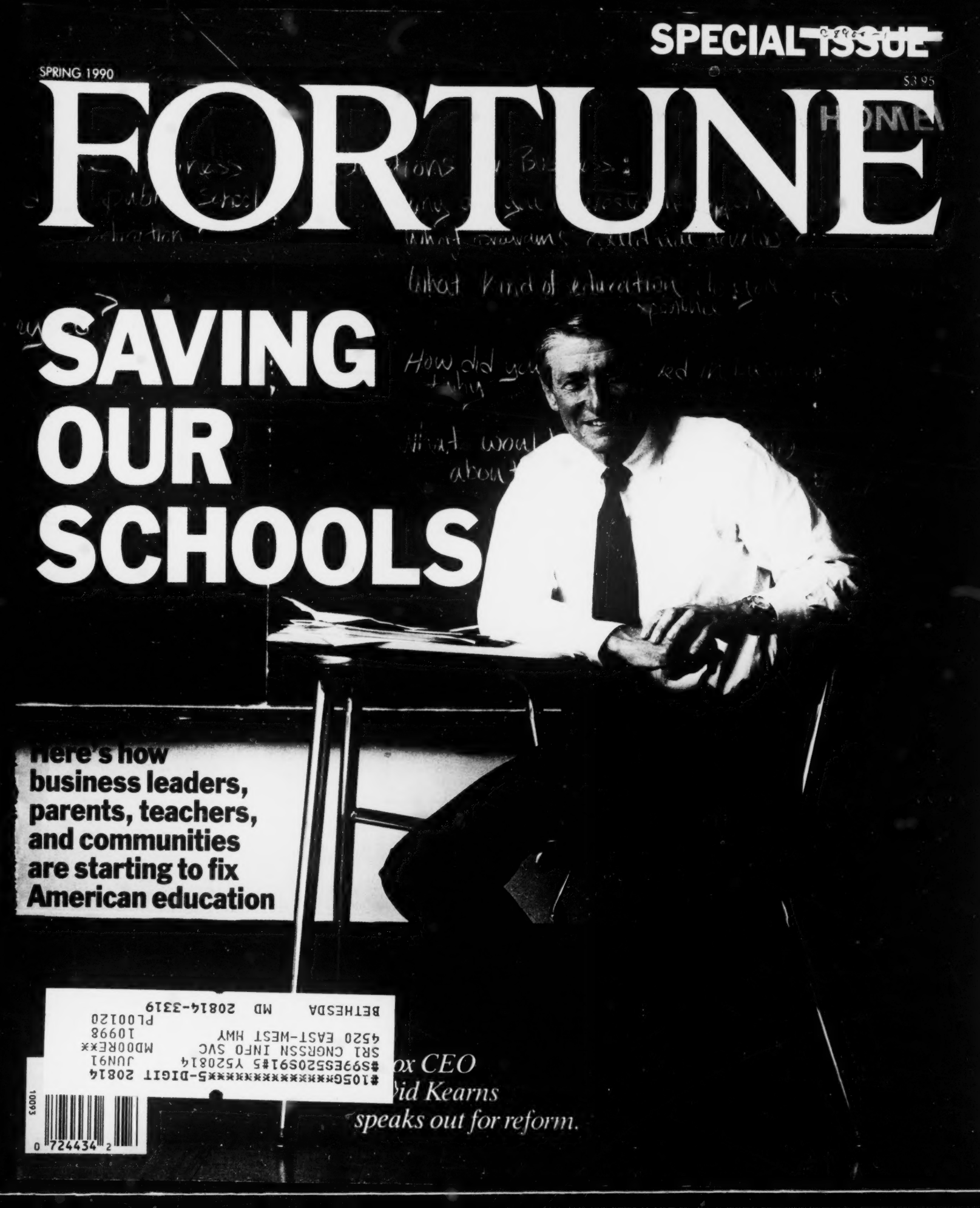
SAVING OUR SCHOOLS



Here's how business leaders, parents, teachers, and communities are starting to fix American education

ox CEO
id Kearns
speaks out for reform.

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SPECIAL ISSUE

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ABOVE: Alan Levenson photographed Linda Linville in her 11th-grade history class at Centennial High School in Corona, California.

COVER: David T. Kearns, chairman and CEO of Xerox Corp., photographed by George Lange in a classroom at South Bronx High School in New York City.

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By working together, business leaders, parents, teachers, and communities can revitalize our most endangered institution. *by Ann M. Morrison*

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Tutors, mentors, and money help. But business also needs to back radical reform of school curriculums and management. *by Brian Dumaine*

A BIGGER ROLE FOR PARENTS 25
Ambitious programs to include parents in the education system are springing up all over the country. The main beneficiaries: kids. *by Susan Caminiti*

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The preschool program is cheap, effective, and due for major expansion. The money should be used to raise teachers' salaries, not just student enrollment. *by Ronald Henkoff*

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"Every child deserves the highest-quality education possible."
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The education team: (front row) Holt, Swan, Benziger, editor Morrison, Perry, Sprout, Kupfer; (middle row) Kuhn, Caminiti, Colvin, McCarthy; (rear) Dreyfuss, Frey, Fromson, and Dumaine

TO BORROW from that famous remark about the weather that Mark Twain really didn't make, everybody complains about education—but in this special issue of FORTUNE, we assume you *can* do something about it.* We think you'll agree that the articles are not a cry in the darkness but a few bright candles of hope for American public schools.

"It is remarkable how much is new," says assistant managing editor Ann Morrison, who supervised this issue and the writers and others pictured above who spent months producing it. "Experiments are going on all over, and many of them are working. There is a heightened awareness of the need for fundamental reform of the schools and a general agreement on the importance of preschool training, math and science education, and mentors."

Corporations are uniquely qualified to help, and have good reasons to lead in the struggle for reform. Their workers are too often the schools' failures. Business also has the money, management skills, and political influence to effect change. On page 93 you'll find a directory of precisely what 88 of them are doing.

FORTUNE is no tardy student of the relationship between schools and business. In our issue of July 4, 1988, Los Angeles bureau chief Nancy Perry wrote the first of our many stories about what business can do. We have since organized two national education summits, bringing together in Washington, D.C., hundreds of business executives, union leaders, educators, and government officials to examine what works and the ways we can speed the process of reform. So before you turn in your blue books in despair, read what we now have uncovered.

Marshall Loeb
MANAGING EDITOR

*The true originator of the weather joke: Hartford *Courant* editorialist Charles Dudley Warner.

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DO U.S. SCHOOLS MAKE THE GRADE?

THREE-FOURTHS of all American high school seniors are qualified, at least theoretically, to go on to college. Yet a study by the National Assessment of Educational Progress found that only 51% of 17-year-olds could adequately use fractions and decimals. Not surprisingly, students in Japan, Hong Kong, Britain, and Poland outperform their U.S. counterparts on high school chemistry and physics tests.

Why are American kids worldclass dunces? Perhaps because they devote too much time to watching television—the only area in which the U.S. leads the pack. Then again, the country may not be challenging its students enough. As Chester E. Finn Jr., a professor at Vanderbilt University, says, "At a time when European leaders are seriously considering requiring all secondary-school students to learn three languages, only 14% of our 11th-graders can write an adequate analytic piece in English."

On the plus side, the U.S. has a wide-open educational system, allowing all students the possibility of going to college. From a young age, students in Japan and Britain, for example, are placed on either a college-preparatory track or a vocational one.

Being at the top of the class requires sacrifice. In the Soviet Union, Japan, and parts of West Germany, children go to school on Saturdays and have at least a month less vacation than Americans. Full-time students in Japan and West Germany are strongly discouraged—and sometimes even prohibited—from taking part-time jobs. Most countries require far more homework than the U.S. does.

The most rigid regimen exists in Japan, where students serve lunch to their classmates and clean bathrooms and hallways. They aren't allowed to ride motorbikes to school or to smoke cigarettes, even after school hours. The Japanese "reward" for survivors of grueling high school courses and university placement exams? First, a closely supervised class trip to Tokyo or Hiroshima or, for the luckier ones, South Korea, Hong Kong, or China. Then, an easier life at the university.

–Alison L. Sprout

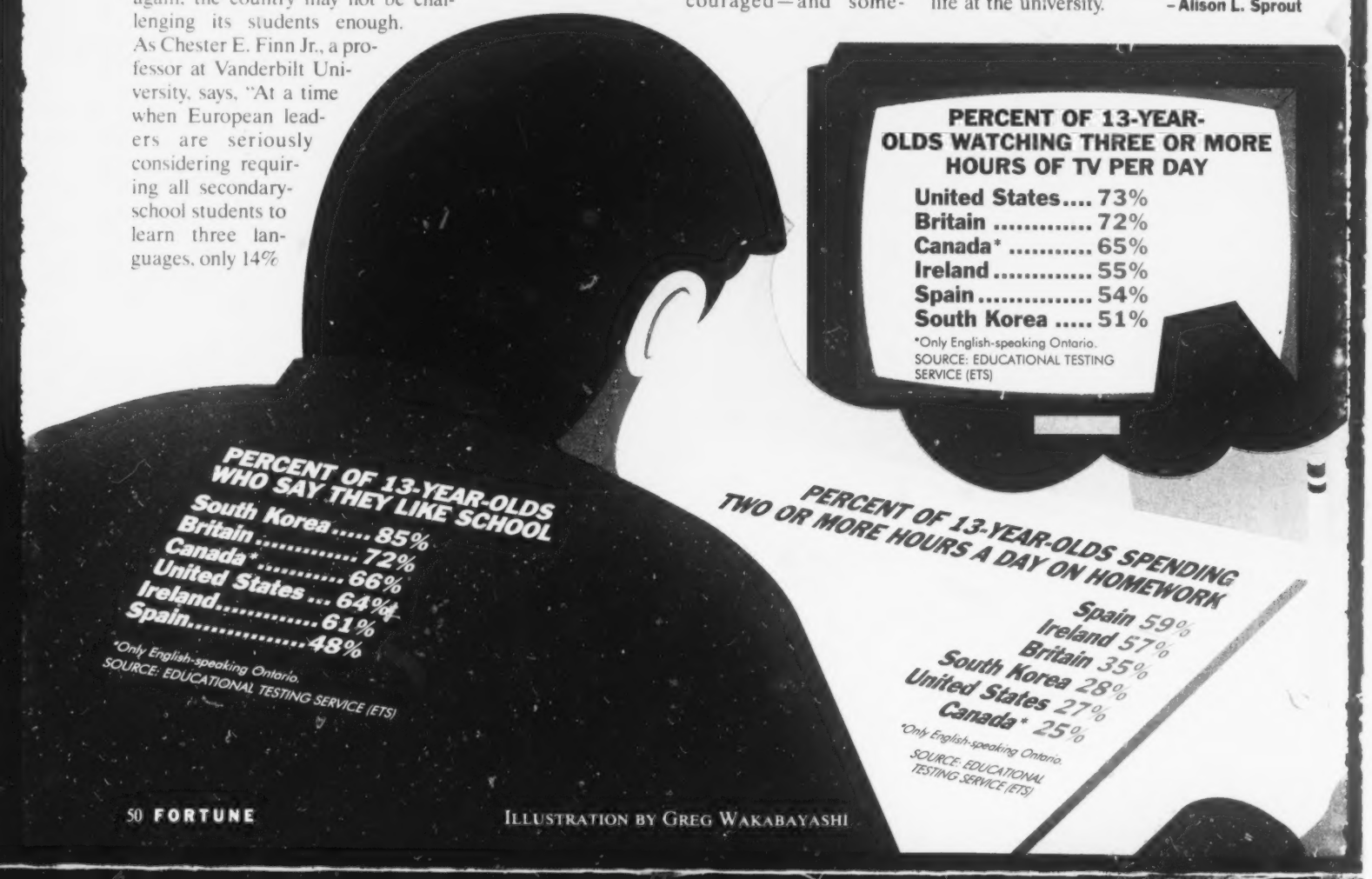


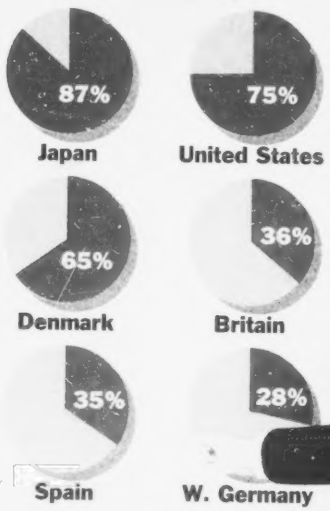
ILLUSTRATION BY GREG WAKABAYASHI

SPENDING ON EDUCATION AS A PERCENT OF GNP

Sweden	7.6%
Canada	7.4%
U.S.S.R.	7.0%
United States	5.6%
Britain	5.2%
Japan	5.1%
W. Germany	4.6%
Italy	4.0%

SOURCE: UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION (UNESCO)

PERCENT OF HIGH SCHOOL SENIORS ELIGIBLE FOR UNIVERSITY



SOURCE: ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT (OECD)

NUMBER OF DAYS IN THE SCHOOL YEAR

Japan	243
U.S.S.R.[1]	208
Hong Kong	195
Britain[2]	192
Canada[3]	186
United States	180

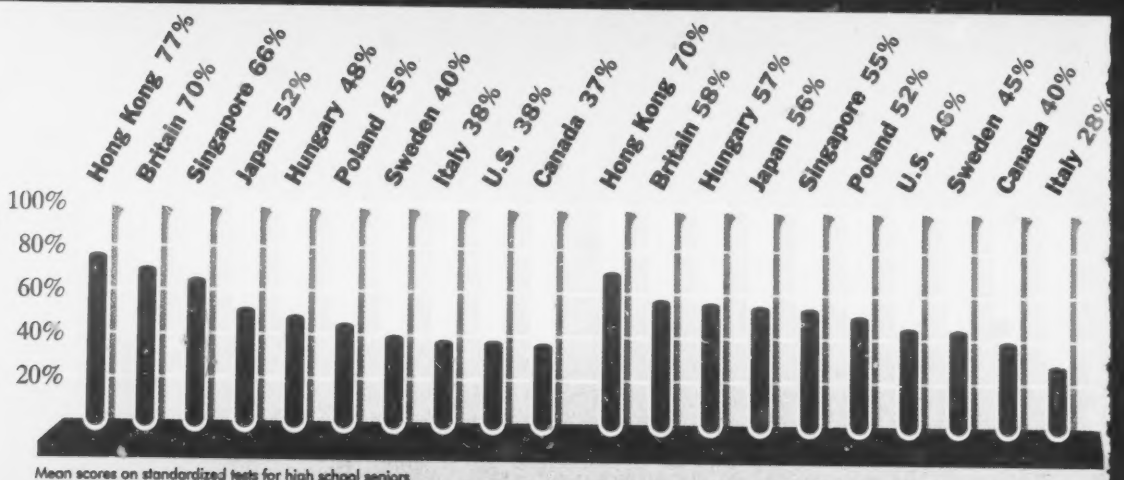
SOURCE: INTERNATIONAL ASSOCIATION FOR THE EVALUATION OF EDUCATIONAL ACHIEVEMENT (IEA)

[1] Source: Soviet journal, *Public Education*.

[2] England and Wales only.

[3] Ontario.

WHERE STUDENTS SCORE BEST ON SCIENCE TESTS



Mean scores on standardized tests for high school seniors

SOURCE: INTERNATIONAL ASSOCIATION FOR THE EVALUATION OF EDUCATIONAL ACHIEVEMENT (IEA)

HOW WASHINGTON CAN PITCH IN

George Bush wants to be Education President. He gets A for rhetoric; Incomplete for action. States must lead, but there's much for the Administration to do. ■ **By Ann Reilly Dowd**

By the year 2000, every child must start school ready to learn.

The United States must increase the high school graduation rate to no less than 90%.

In critical subjects, at the fourth, eighth, and 12th grades, we must assess our students' performance.

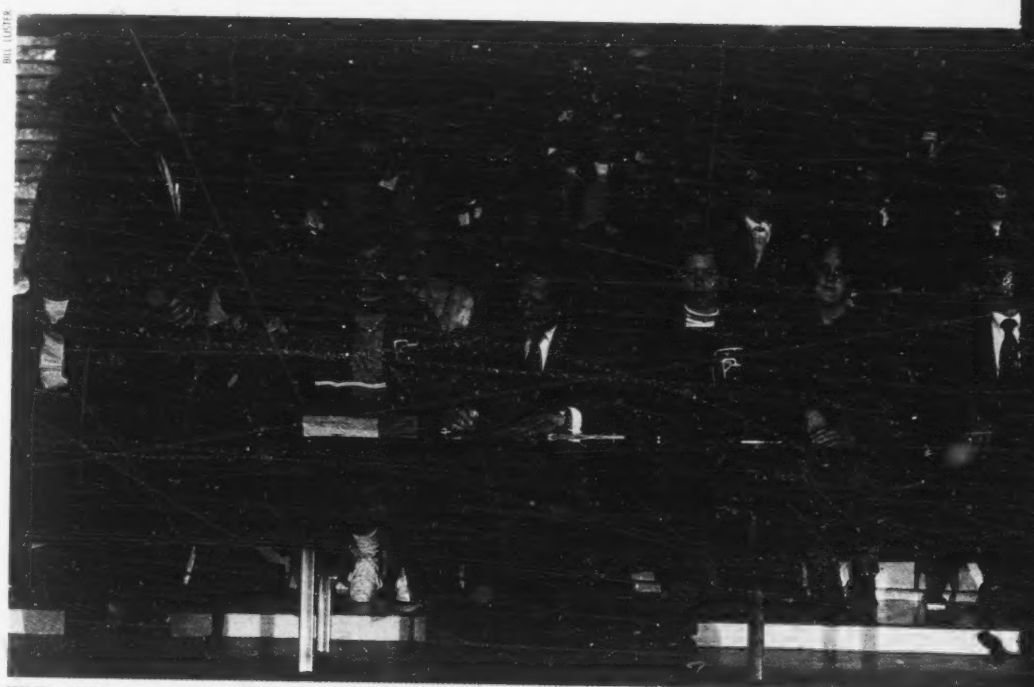
U.S. students must be the first in the world in math and science achievement.

Every American adult must be a skilled, literate worker and citizen.

Every school must offer the kind of disciplined environment that makes it possible for our kids to learn.

And every school must be drug free.

—President George Bush
"The State of the Union," January 31, 1990



BILL LUCHS

While students watch, Kentucky Governor Wilkinson signs a bill for a decentralized school system.

GREAT GOALS, Mr. President. Now it's time for you and the governors to get to work. By most measures the nation's education system is badly broken. Despite a doubling of spending in the 1980s, standardized test scores remain low, below those of our leading competitors. "We can't fix the system," says American Federation of Teachers President Albert Shanker with painful honesty. "We need radical change."

Nearly everyone agrees that states must take the lead. The Constitution omits any reference to education among federal powers, so the responsibility lies by implication with them. Along with local governments, states pay 86% of America's education bill. Moreover, the statehouse is closer to the problems—and the solutions. Says South Carolina Governor Carroll Campbell Jr., co-chairman of the National Governors' Association Education Task Force: "Communities need flexibility in dealing with their particular areas. Parents don't want the federal government running education."

Still, the President can focus public attention on the need for educational reform. George Bush already has earned an A for rhetoric by proclaiming goals, convening the first government-sponsored education summit, and honoring a teacher of the year. But to be worthy of the title Education President, he also needs to muster the resources of the executive branch to achieve results. On that score, he gets an Incomplete.

A President wise in the ways of Washington and committed to education reform would appoint a more dynamic Education Secretary than Lauro Cavazos, the first Hispanic president of Texas Tech University, who seems to have been picked more for ethnic balance than for his reformist zeal. Such a President would create a new Cabinet Council on Human Resource Development that pulled together the Secretaries of Education, Labor, Health and Human Services, Agriculture, and Treasury, plus the Budget Director, for an all-out drive toward educational excellence. He would also appoint a high-level adviser in the White House to push important initiatives through political roadblocks. But Bush has done none

REPORTER ASSOCIATE *Jennifer Reese*

Top teacher: Janis Gabay of San Diego

of these things. Says former Labor Secretary Ann McLaughlin: "Managing U.S.-Soviet relations alone won't keep America strong. We need a national commitment to lifelong learning."

Though Bush has shown no interest in major increases in federal spending to improve education, he should. An epidemic of social ills from drug abuse to homelessness continues to distract youngsters from the business of learning. Washington must attack these problems more aggressively and improve the delivery of social services to the needy. One way is to tie federal aid to states to the development of so-called one-stop service centers in or near schools where poor people can get food stamps, housing, job training, and other kinds of help all in one place.

The single most important thing President Bush can do is push for more money for existing federal programs that prepare poor children for school. The highly effective Head Start preschool program, for instance, reaches about a fifth of the poor children eligible for it. But the Head Start budget should plan for higher teacher salaries and better quality control—not just more students.

Washington should also spend more on programs that provide nutrition and health care for needy children. A good example is recent federal legislation financing comprehensive social service centers along the lines of Chicago's innovative Beethoven Project. Funded from public and private sources, Beethoven trains older women in public housing developments to visit expectant mothers and tell them about available prenatal care, family counseling, and other social services. The program also provides health care, nutrition, and preschool classes for neighborhood children.

THE PAYOFFS from such investments are enormous both for individuals and for society. The House Select Committee on Children, Youth, and Families reports that a dollar invested in prenatal care saves up to $3 in hospital costs alone. A dollar invested in preschool education saves as much as $6 in special education, welfare, crime, and lost productivity. Says Ernest Boyer, president of the Carnegie Foundation for the Advancement of Teaching: "Early intervention is powerfully in America's self-interest."

The Administration can use its regulatory muscle as an instrument of change. Federal aid to education is so narrowly structured that it can penalize performance. For instance, computers bought with "Chapter 1"

THE NATION'S REPORT CARD

	HIGH SCHOOL GRADUATION RATE, 1988 (rank)		SAT OR ACT SCORES,* 1989 (rank)		AVERAGE TEACHER SALARY, 1989 (rank)		PUPIL/ TEACHER RATIO, 1989 (rank)		EXPENDITURES PER PUPIL, 1988 (rank)		TEACHER SALARIES AS % OF TOTAL SCHOOL EXPENDITURES, 1988 (rank)		COMPETENCY TEST REQUIRED FOR GRADUATION
ALABAMA	74.9	(23)	17.9	(19)	$25,190	(37)	18.7	(43)	$2,718	(48)	48.4	(2)	YES
ALASKA	65.5	(43)	17.9	(19)	$41,693	(1)	17.0	(26)	$7,971	(1)	33.5	(51)	NO
ARIZONA	61.1	(48)	19.0	(12)	$28,684	(23)	18.2	(37)	$3,744	(34)	43.2	(22)	NO
ARKANSAS	77.2	(17)	17.6	(25)	$21,692	(50)	15.7	(15)	$2,989	(47)	46.6	(3)	YES
CALIFORNIA	65.9	(42)	906	(5)	$35,285	(5)	22.7	(50)	$3,840	(31)	38.7	(42)	YES
COLORADO	74.7	(24)	19.6	(5)	$29,558	(17)	17.8	(34)	$4,462	(16)	39.2	(38)	NO
CONNECTICUT	84.9	(7)	908	(4)	$37,339	(3)	13.1	(1)	$6,230	(4)	43.3	(20)	NO
DELAWARE	71.7	(32)	903	(8)	$31,605	(11)	16.4	(23)	$5,017	(11)	39.6	(37)	NO
FLORIDA	58.0	(51)	887	(15)	$26,648	(30)	17.1	(28)	$4,092	(25)	40.2	(34)	YES
GEORGIA	61.0	(49)	847	(19)	$28,038	(25)	18.5	(41)	$3,434	(39)	44.2	(14)	YES
HAWAII	69.1	(38)	888	(14)	$30,778	(15)	21.1	(49)	$3,919	(29)	37.6	(44)	YES
IDAHO	75.4	(22)	19.1	(9)	$22,860	(44)	20.6	(48)	$2,667	(49)	43.6	(16)	NO
ILLINOIS	75.6	(21)	18.8	(16)	$31,195	(13)	17.1	(28)	$4,369	(19)	45.0	(9)	NO
INDIANA	76.3	(19)	871	(18)	$28,664	(24)	17.8	(34)	$3,794	(32)	43.6	(16)	NO
IOWA	85.8	(5)	20.1	(1)	$25,884	(33)	15.8	(16)	$4,124	(24)	40.4	(32)	NO
KANSAS	80.2	(9)	19.1	(9)	$27,401	(27)	15.2	(12)	$4,076	(26)	44.2	(14)	NO
KENTUCKY	69.0	(39)	17.8	(22)	$24,920	(40)	17.8	(34)	$3,011	(46)	49.8	(1)	NO
LOUISIANA	61.4	(47)	17.1	(27)	$22,470	(45)	18.2	(37)	$3,138	(43)	40.0	(35)	YES
MAINE	74.4	(25)	897	(10)	$24,933	(39)	14.6	(7)	$4,258	(20)	40.7	(30)	NO
MARYLAND	74.1	(26)	914	(3)	$33,700	(8)	16.8	(25)	$5,201	(9)	40.4	(32)	YES
MASSACHUSETTS	70.0	(35)	905	(6)	$31,670	(10)	13.7	(5)	$5,471	(6)	44.4	(12)	NO
MICHIGAN	73.6	(29)	18.6	(18)	$34,419	(6)	19.8	(45)	$4,692	(15)	38.0	(43)	NO
MINNESOTA	90.9	(1)	19.7	(4)	$31,500	(12)	17.0	(26)	$4,386	(18)	42.9	(25)	NO
MISSISSIPPI	66.9	(40)	15.9	(28)	$22,036	(47)	18.4	(39)	$2,548	(50)	45.9	(4)	YES
MISSOURI	74.0	(28)	19	(12)	$25,981	(32)	15.9	(18)	$3,786	(33)	45.6	(5)	NO
MONTANA	87.3	(4)	19.8	(3)	$24,414	(41)	15.8	(16)	$4,246	(21)	38.8	(41)	NO

*SAT scores range from 400 to 1600, ACT scores from 1 to 36.

money for educationally disadvantaged children cannot be used at night to teach adults to read. And if a school succeeds in keeping more students from dropping out or failing, aid is reduced. The National Center on Education and the Economy, chaired by Apple Computer CEO John Sculley, has a sensible alternative: Allow states greater flexibility in the use of federal funds in exchange for adopting—and living by—ambitious student performance goals. Legislation along those lines introduced by Vermont Congressman Peter Smith deserves serious attention by Congress.

The federal government should play a more extensive role in educational research and development. While the Department of Education has established some measures of student achievement nationally, including the data below, it lacks the budget and in many cases the legal authority to gather information needed to compare countries, states, school districts, schools, or individual students. Education administrators, testing companies, and the Parent-Teacher Association—representing mostly teachers—have objected vehemently to some of the small steps Congress has taken to increase federal oversight. Educators object on grounds that accurate measures are not possible. But critics think they're mainly worried that comparisons will show how badly they're doing.

Some states are developing their own new measurements, but a coordinated approach demands federal leadership. A good beginning is New Mexico Senator Jeff Bingaman's national report card bill, which would set up a commission of experts to assess progress toward national goals, identify gaps in existing data, and make recommendations for improved testing.

FACT

The U.S. Army rejects 60,000 potential enlistees a year. They are not smart enough to serve.

Finally, Washington can spur innovation through well-designed pilot projects. The President has focused on the worthy goal of better teaching. His proposals include merit pay for excellent teachers and grants to states to improve math and science teaching and to develop alternative certification procedures.

But he has missed one enormous opportunity: the chance to lead the way to the classroom of the future by underwriting the development of interactive video software and training teachers in its use. Says California school superintendent Bill Honig, who has developed a new history video program with Lucasfilm, Apple Computer, and National Geographic: "Such investments can pay huge dividends." (See Technology.)

Many governors have

	HIGH SCHOOL GRADUATION RATE, 1988 (rank)		SAT OR ACT SCORES,* 1989 (rank)		AVERAGE TEACHER SALARY, 1989 (rank)		PUPIL/ TEACHER RATIO, 1989 (rank)		EXPENDITURES PER PUPIL, 1988 (rank)		TEACHER SALARIES AS % OF TOTAL SCHOOL EXPENDITURES, 1988 (rank)		COMPETENCY TEST REQUIRED FOR GRADUATION
NEBRASKA	85.4	(6)	19.6	(5)	$24,203	(42)	15.0	(10)	$3,943	(28)	41.0	(29)	YES
NEVADA	75.8	(20)	19	(12)	$28,840	(22)	20.3	(46)	$3,623	(36)	43.2	(22)	NO
NEW HAMPSHIRE	74.1	(26)	932	(1)	$26,703	(29)	16.2	(22)	$4,457	(17)	37.0	(46)	NO
NEW JERSEY	77.4	(15)	894	(12)	$32,923	(9)	13.6	(3)	$6,564	(3)	37.0	(46)	NO
NEW MEXICO	71.9	(31)	17.8	(22)	$25,205	(36)	18.5	(41)	$3,691	(35)	41.6	(28)	YES
NEW YORK	62.3	(46)	890	(13)	$36,500	(4)	14.9	(9)	$7,151	(2)	37.1	(45)	YES
NORTH CAROLINA	66.7	(41)	836	(22)	$25,650	(34)	17.5	(31)	$3,368	(41)	45.0	(9)	YES
NORTH DAKOTA	88.3	(2)	18.7	(17)	$22,249	(46)	15.4	(13)	$3,519	(38)	43.4	(19)	NO
OHIO	79.6	(10)	19.1	(9)	$29,152	(20)	17.6	(33)	$3,998	(27)	43.3	(20)	NO
OKLAHOMA	71.7	(32)	17.7	(24)	$22,000	(48)	16.5	(24)	$3,093	(44)	44.9	(11)	NO
OREGON	73.0	(30)	927	(2)	$29,500	(18)	18.4	(39)	$4,789	(13)	36.3	(50)	YES
PENNSYLVANIA	78.4	(14)	886	(16)	$30,720	(16)	15.9	(18)	$4,989	(12)	39.7	(36)	NO
RHODE ISLAND	69.8	(36)	895	(11)	$34,233	(7)	14.5	(6)	$5,329	(7)	45.5	(6)	NO
SOUTH CAROLINA	64.6	(45)	838	(21)	$25,060	(38)	17.2	(30)	$3,408	(40)	45.3	(7)	NO
SOUTH DAKOTA	79.6	(10)	19.4	(7)	$20,480	(51)	15.4	(13)	$3,249	(42)	41.9	(27)	NO
TENNESSEE	69.3	(37)	17.9	(19)	$25,619	(35)	19.3	(44)	$3,068	(45)	43.1	(24)	YES
TEXAS	65.3	(44)	877	(17)	$26,513	(31)	–	(—)	$3,608	(37)	44.3	(13)	YES
UTAH	79.4	(12)	18.9	(15)	$23,023	(43)	24.5	(51)	$2,454	(51)	40.7	(30)	NO
VERMONT	78.7	(13)	905	(6)	$26,861	(28)	13.6	(3)	$5,207	(8)	36.8	(48)	YES
VIRGINIA	71.6	(34)	902	(9)	$29,056	(21)	16.1	(21)	$4,149	(23)	43.6	(16)	YES
WASHINGTON	77.1	(18)	–	(—)	$29,176	(19)	20.4	(47)	$4,164	(22)	36.4	(49)	NO
WASHINGTON, D.C.	58.2	(50)	846	(20)	$37,504	(2)	13.3	(2)	$6,132	(5)	45.3	(7)	YES
WEST VIRGINIA	77.3	(16)	17.4	(26)	$21,904	(49)	15.1	(11)	$3,858	(30)	39.1	(39)	NO
WISCONSIN	84.9	(7)	20.1	(1)	$31,046	(14)	16.0	(20)	$4,747	(14)	42.6	(26)	NO
WYOMING	88.3	(2)	19.4	(7)	$27,685	(26)	14.6	(7)	$5,051	(10)	38.9	(40)	NO
AVERAGE	71.1		903/18.6		$29,567		17.4		$4,243		41.3		

*SAT scores range from 400 to 1600; ACT scores from 1 to 36.

been pushing reform long enough to understand what works and what doesn't. Strategies are beginning to change. Most early efforts focused on tough rules: tighter course requirements, higher teacher certification standards, and the like. But performance did not improve markedly. Now many states are concentrating on results. Says Chester Finn, assistant secretary of education in the Reagan Administration: "The shift from regulating means to regulating ends represents a historic change."

PAT DAWSON

Teenage mothers stay in class in Albuquerque's New Futures School.

THE FIRST STATE to move wholeheartedly in that direction was California. In 1983 the state's Democratic leaders launched a major drive to prepare youngsters for the new information-age job market and to function as citizens of a democracy. The goal-setting process involved educators, parents, community leaders, business, and labor. The state-financed program involved heavy investment in new technology and teacher development, and resulted in major changes in curriculum, textbooks, teaching methods, and testing. Schools were encouraged to seek waivers from any state regulations they felt got in the way of specific programs. The result: Despite a surge in enrollments—including many poor and bilingual children—eighth-graders' performance improved 25% in three years.

South Carolina followed a similar course with equally impressive results. In six years the state raised average scores on the Scholastic Aptitude Test 40 points, more than any other state. Fifteen other states have enacted such reforms, including Kentucky, which was forced to do so by the Kentucky Supreme Court. Because of the way Kentucky's schools were funded, among other problems, the court ruled that the whole system violated the state's constitution. Starting from scratch, the state has opted for a performance-based system that gives unprecedented freedom and responsibility to individual schools.

What lessons can be drawn from these pioneering efforts? First, successful reform requires cooperation among traditionally combative power centers. Responsibility must flow from the statehouse to the schoolhouse without loss of accountability. Business must get involved. School administrators and union leaders must share control with teachers, parents, and students.

It isn't easy. Says New Mexico Governor Garrey E. Carruthers, a Republican who just maneuvered a sweeping reform package through his Democratic legislature: "Make no mistake, it takes political leverage, good old-fashioned horse trading, and more money." To win support, Carruthers had to raise teachers' and administrators' salaries, fund after-school programs, and offer extra money to schools that restructured. The cost: $50 million a year more in revenues, raised through a 0.25% increase in gross-receipts taxes. His fellow Republicans howled, but the governor finally persuaded them with stiff accountability standards embedded in a report card bill. All 88 school districts must now report annually on how well their students do. Says Carruthers: "The key was accountability."

Many reform governors have found that accountability demands new measures of performance. Across America, most public schools rely on multiple-choice tests that measure a student's retention of facts but not the analytical skills that will be needed in the future. Critics say standardized tests discriminate against minorities and distort classroom instruction by putting too much emphasis on memorization.

To refocus students and teachers on creative thinking and teamwork, several states are experimenting with new forms of testing. Vermont plans to test fourth- and eighth-graders in writing and math using three methods: a uniform test, a portfolio of work developed over the course of the year, and a single piece chosen by the student.

In 1991, Connecticut will launch a new math and science assessment of high school students involving tasks that may take student teams as long as a semester to complete. A sample assignment: design, carry out, and report on an experiment to determine which food store in your community would save a family of four the most money over the course of a year.

ONCE STANDARDS are set, schools must be held to them. Minnesota, Nebraska, Iowa, Arkansas, and Ohio rely on consumers to provide discipline. In the most radical change in the history of U.S. public school education, these states allow parental choice—students can attend any public school in the state.

Eight other states intervene directly when schools don't make the grade. In the best systems the state first offers financial and managerial assistance. If that fails, the state takes over the school or shuts it down. One South Carolina elementary school was turned around when state officials introduced IBM's innovative Writing to Read computer program. In Jersey City, school administrators stuck with their methods even when the dropout rate topped 30%. Thomas Kean, who was then New Jersey's governor, threw out the recalcitrants and installed a new management team.

A way to win teachers' support is to free them of the regulatory strings that bind them like Gulliver lying on the beach. State boards of education often dictate what teachers teach and from what texts. States also control pay. Excellence is rarely rewarded: Pay is generally based on years served—or in some cases endured. Many teachers lack career ladders: a 30-year veteran does the same work as a new recruit.

Connecticut put teacher excellence at the center of its restructuring plan. The state has raised pay almost 40% since 1986 to an

average $37,339, and increased standards. New teachers serve under experienced mentors. Veterans have to take 90 hours of professional development every five years, at state expense.

NEW JERSEY eliminated its shortage of quality teachers through an alternative certification process launched by Kean. Applicants without traditional education degrees have to pass a test and agree to a year of supervision and after-hours training. Says Kean: "It means engineers from Bell Labs can teach computer science, jazz musicians can teach music, and former private-school teachers can work in the public schools. The profession is revitalized, and there's a great big teacher surplus." Twenty-seven states are following New Jersey's lead.

A number of states are also experimenting with financial incentives. Eight offer teachers and schools financial rewards for outstanding performance. In South Carolina the money can be used to buy instructional materials and computers or to train teachers. Last year 265 of the state's 1,100 schools won over $4 million in incentive money.

States also must be greater fiscal equalizers among school districts. The Congressional Research Service reports that during the 1986-87 school year, over half the states spent twice as much per pupil in some school districts as in others; a third spent three times; New York, eight times. The courts have already required ten states to implement more equitable financing formulas, and lawsuits have been filed in ten others.

Another key is higher student expectations and opportunities. That's what Minnesota Governor Rudy Perpich learned from his pioneering program that gives 11th- and 12th-graders a state stipend to attend classes at state colleges and universities. Says Perpich, who also started the nation's first statewide choice program: "A number of students drop out because they are bored. Of all our reforms, this one is doing the most for education."

Louisiana Governor Buddy Roemer learned the same lesson from a generous oilman. Two years ago Patrick F. Taylor offered to pay college tuition for 180 poor seventh- and eighth-graders—most of whom had repeated two or more grades—if they stayed out of trouble and graduated from high school with a B average. Today 150 are still in high school (19 moved, 11 were dismissed). On the precollege ACT test, half the tenth-graders scored at least 18, close to the national average. Inspired by Taylor's kids, Roemer pushed a bill through the legislature that puts state money behind a similar statewide program.

Still, all the opportunities in the world may not be enough to help the student whose family life is abusive, who sleeps on the street, or who is addicted to drugs or alcohol. This is not a negligible number: New York City School Chancellor Joseph A. Fernandez says 28 babies a day are born to drug-addicted mothers, the equivalent of 365 kindergarten classes a year. Schools are not equipped to solve such problems. But to succeed in their mission, they will increasingly have to help students and their families get the help they need.

In Albuquerque, New Mexico, the New Futures School is tackling the problem of teenage pregnancy. Founded by volunteers 20 years ago in the basement of a YWCA, New Futures combines on-site health and child care, nutrition advice, personalized counseling, and job placement for 500 young women a year. While more than half of teen mothers nationwide drop out, about 75% of those in the New Futures program graduate and go on to jobs or higher education. Honeywell Chairman James Renier was so impressed that he flew two planeloads of Minneapolis–St. Paul city leaders to Albuquerque to see the school firsthand. Convinced, they are now trying to build their own New Futures schools.

Who will pay for such promising reforms? Ideally, all levels of government. But given Bush's no-new-taxes posture, the reality is that state and local governments will have to pick up the check for most of them. That's not necessarily bad. Many governors, like Carruthers, have had the courage to raise taxes. And if New Mexico is a bellwether, voters have grasped a truth that still escapes many politicians: Either America pays now for educational excellence, or it pays more, much more, later. F

THE TEN EDUCATION GOVERNORS

JOHN ASHCROFT (R–Missouri)
By providing tutors for some lagging first-graders, Missouri has dramatically cut the number of children repeating that grade.

TERRY BRANSTAD (R–Iowa)
Branstad is building the first two-way video network so teachers can reach students statewide.

CARROLL CAMPBELL JR. (R–South Carolina)
His partnership with business to improve literacy and job training is the nation's most extensive.

BILL CLINTON (D–Arkansas)
One of America's most articulate reform advocates, he has pioneered new approaches to early childhood development.

GARREY CARRUTHERS (R–New Mexico)
This former economics professor will give New Mexicans an annual report card on the state's 88 districts.

BOOTH GARDNER (D–Washington)
Gardner was one of the first to take a hard look at what students will need to know in the 21st century.

MADELEINE KUNIN (D–Vermont)
Instead of relying on standardized tests, Vermont is pioneering the use of a portfolio of student work to assess math and writing skills.

RAY MABUS (D–Mississippi)
To ensure that children start school ready to learn, the state screens 3-year-olds. Those who need help get it.

RUDY PERPICH (D–Minnesota)
Parents can choose among schools statewide, and high school students can take courses in state colleges.

TOMMY THOMPSON (R–Wisconsin)
Wisconsin is experimenting with choice and with cutting welfare for parents whose children are truants.

How Business Helps Schools

All but 2% of the companies responding to a FORTUNE *poll contribute to education—but some are more committed than others. Want ideas? Read on.* ■ **By Susan E. Kuhn**

BY NOW it is clear: Corporate involvement in public school reform has become serious business. Since the education system has failed to check the erosion of basic skills, companies are proposing increasingly innovative measures to help schools turn out a new generation of workers who can read, write, compute, and think.

Do you buy the argument that remedial education is the automatic answer to dropout prevention? Chevron doesn't. By 1992 it will have given $1.5 million to the Stanford University Accelerated Schools program to expand a project, currently in place in 39 schools, that builds the skills of disadvantaged youngsters by *accelerating* their elementary school studies. Want to *really* make a school partnership work? Cigna not only supplies equipment and employee volunteers to the five Philadelphia schools it has adopted, but also provides management training for school administrators as part of the $1.5 million it has committed over a three-year period ending in 1991. The list of such imaginative programs is growing.

To find out just what America's leading companies are doing to save public schools, and to encourage others by their example, FORTUNE polled all FORTUNE 500 and Service 500 companies. Many of the questions were the same as those posed last year in a longer FORTUNE magazine–Allstate Insurance survey of the same group of corporations. In 1989, 404 companies returned their questionnaires. This year, 305 responded.

Only seven of this year's companies, 2%, do nothing for education, down from 4% in 1989. Though 41% of the companies that participated in the 1990 poll give less than $100,000 annually to public schools, 28% donate from $100,000 to $500,000, and a laudable 18% contribute $1 million or more a year. More impressive, 70% of top executives are now actively involved in their companies' efforts.

The survey asked companies for a brief description of any interesting public school programs in which they are involved. This year's responses were heartening, and rarely brief. The table on the following pages highlights several strategies that 88 of the most involved companies are taking. The directory, which includes some companies not on either FORTUNE 500 list, generally describes only elementary and high school initiatives, although each company is credited with its entire annual financial contribution to education.

WHAT COMPANIES ARE DOING TO HELP PUBLIC EDUCATION*

Contribute money	78%
Offer students summer or part-time jobs	76%
Contribute materials or equipment	64%
Encourage employees to run for school boards	59%
Encourage employees to tutor or teach	50%
Participate in school partnerships	48%
Offer teachers summer jobs	26%
Lobby legislatures for reform	22%
Support tax increases or bond issues	18%
Loan executives to schools	12%

*Figures do not add to 100% as companies were allowed to choose more than one answer.

The biggest benefactors are corporate household names. In its 1989 annual report, International Business Machines mentioned almost casually that it had targeted a hefty $46 million (between 1989 and 1993) toward improving elementary and secondary education. The company is no newcomer to the field—it first declared its commitment to education in the early 1930s—which may explain why it is now the kingpin of corporate givers.

IBM's worldwide contributions to all levels of education in 1988 totaled $81 million, according to the Taft Group, a firm in Rockville, Maryland, that tracks corporate contributions using IRS data, company reports, and matching grants. (Therefore, this figure is higher than IBM's own calculations.) No. 2 in spending on the Taft list is Procter & Gamble, with $19 million, followed closely by General Electric and AT&T, with $18 million each. Rounding out the top ten, with contributions from $16 million to $8 million, are Du Pont, Minnesota Mining & Manufacturing, Shell Oil, Ford Motor, Eastman Kodak, and Boeing.

Where is the money going? Over 80% of the companies in the FORTUNE survey report that they give to colleges or universities. Graduate programs and high schools come next. Last year graduate programs took second place with 57% support, followed closely by high schools with 55%. The order was reversed this year, with 58% of companies contributing to high schools and 52% to grad schools.

That's because as the importance of early

REPORTER ASSOCIATE *Stephanie Losee*

academic intervention becomes better known, the numbers are turning in favor of the lower grades. Over the past few years, IBM and GE have shifted contributions toward elementary and secondary schools, and US West and Texas Instruments are even funding preschool efforts. Mobil, which currently targets an estimated 5% of its current $7 million education budget on kindergarten through 12th grade, may soon increase that percentage by supporting programs that encourage more minorities and women to become science teachers.

The ways in which companies can help American schools—and American students—include contributing money, offering summer jobs to children and teachers, and encouraging employee involvement. While the majority of this year's FORTUNE respondents participate mainly by writing a check, a significant 50% or more report more direct links, with employees serving on school boards or as tutors in classrooms. Nearly half of all companies polled underwrite school partnerships in which corporations adopt one or many schools.

School partnerships are what the partners make of them. Involvement can range from minimal (a Central Fidelity bank in Richmond has run a minibank at Chimborazo Elementary since 1988) to substantial (Cray Research gave $500,000 last year to its 70 school partners in northwest Wisconsin to promote math and science). The National Center for Education Statistics reports that 40% of public schools were involved in partnerships during the 1987-88 school year, up from 17% in 1983-84. Businesses sponsored 70% of all partnerships in 1987-88.

Meanwhile, political efforts to reform public schools—lobbying legislatures for educational change or supporting bond issues—seem to be losing popularity. The 1989 FORTUNE/Allstate survey found that 33% of respondents were pressing for educational change in their states. That number is only 22% this year. In addition, corporate support for educational bond issues has fallen by four percentage points.

Successful educational programs are usually the ones close to home. One true pioneer is Climax Molybdenum, a mining subsidiary of Amax. Concerned about the quality of rural education in its Colorado hometown, Climax formed an advisory committee in 1958 to start student scholarships and teacher training programs. Even when prices for minerals, especially molybdenum, fell sharply in the 1980s and Climax was forced to cut its Colorado payroll from 5,000 employees to 1,000, the support continued. Says Terry Fitzsimmons, an Amax public relations director who started with Climax in the 1950s: "Management could have said that our scholarship programs were just cream, but they didn't. We've been very pleased."

Banks and insurance companies are pros at making the most of neighborhood connections. All 16 Citibank branches in Florida's Dade County have adopted local schools, and through a special fund the bank is giving out cash grants averaging $500 to local educators who devise ways to cut Miami's dropout rate. Connecticut Mutual Life, ITT Hartford Insurance Group, and Phoenix Mutual Life Insurance have all adopted or funded programs at Hartford schools, providing them with everything from a dance floor to summer jobs for students. Approximately 15% of the Phoenix staff in Hartford, for example, each week tutors fourth-, fifth-, and sixth-graders from Fred D. Wish Elementary School in the company cafeteria.

On the theory that good incentives are a good idea, Jostens, the school-ring company in Minneapolis, designed an innovative reward system two years ago for junior high and high school students. Called the Renaissance Program, it encourages students to get high grades in exchange for such perks as reserved parking or exemption from final exams. By September the program will be in effect in 1,000 schools nationwide. Elsewhere, pharmaceutical companies such as Upjohn and Merck are loaning out scientists or opening their corporate labs to teachers for science research projects.

Companies are beginning to look at educational contributions the way they've traditionally regarded research and development costs—as long-term investments. Though 55% of the respondents to this year's FORTUNE poll believe that their educational efforts have made little, if any, impact so far, that number was 75% in the 1989 survey. As in business, companies should look at—and learn from—both the successful programs and those that are not working as well. Top managers should also realize that many, perhaps even most, of their investments in the schools may ultimately pay off. Says Albert Shanker, president of the American Federation of Teachers: "We have hundreds of people struggling to find the same answers. We need a system of sharing and communication." With that in mind, FORTUNE presents the following list.

ANNUAL CORPORATE CONTRIBUTION TO PUBLIC EDUCATION

Under $100,000	41%
$100,000–$499,999	28%
$500,000–$999,999	7%
$1 million–$4,999,999	14%
$5 million or more	4%
No answer	6%

WHERE CORPORATE CONTRIBUTIONS GO*

Preschool	14%
Elementary school	27%
Junior high school	32%
High school	58%
Vocational school	38%
College	81%
Graduate school	52%

*Figures do not add to 100% as companies were allowed to choose more than one answer.

HOW INVOLVED IS TOP MANAGEMENT?

Very involved	32%
Fairly involved	38%
Not too involved	25%
Not at all involved	5%

HAS CORPORATE INVOLVEMENT MADE ANY DIFFERENCE?

Big difference	6%
Fair amount of difference	33%
Not much difference	48%
No difference	7%
No answer	6%

WHERE THE MONEY IS GOING

COMPANY location	ANNUAL CONTRIBUTIONS TO EDUCATION	PROGRAM HIGHLIGHTS
ALLIED-SIGNAL Morristown, New Jersey 201-455-5876	$$$$	**High school partnerships, summer internships for teachers.** Improving science and math skills is top priority at Allied-Signal. The corporate foundation gives grants nationwide; on the local level, it offers summer internships to science teachers through a New Jersey consortium.
AMAX New York City 303-234-9020	$$$	**Teaching fellowships, student scholarships.** In the mountains in Colorado, where Amax subsidiary Climax Molybdenum operates, rural students and teachers have benefited from Climax's interest. Among the many programs: a summer teacher fellowship ($1,000 each to up to 20 recipients) and a doctoral fellowship to train future administrators for rural schools.
AMERICAN EXPRESS New York City 212-640-5660	$$$$	**Academies.** In 1982, American Express launched an innovative Academy of Finance at John Dewey High School in Brooklyn. Designed to prepare urban juniors and seniors for careers through a combination of classroom experience and on-the-job training, the program proved a runaway success. Today several corporations sponsor 35 finance academies across the country. American Express set up an independent National Academy Foundation last year to bring the concept to other industries and to expand such programs worldwide.
AMERICAN TELEPHONE & TELEGRAPH New York City 212-605-6008	$$$$$	**School reform.** AT&T may be a long-distance carrier, but it hasn't lost the local connection. In those cities where AT&T has a major facility, Ma Bell has established an Urban Schools Initiative that focuses on curriculum reform and student achievement. In Phoenix, for example, the foundation sponsors the Hispanic Mother-Daughter program, which selects disadvantaged but potentially successful eighth-grade girls and lets them—and their mothers—visit Arizona State University throughout the school year to see what college is like.
AMOCO Chicago 312-856-5111	$$$$$	**School reform.** Amoco believes in questioning the basics. It is a primary sponsor of the University of Chicago School Mathematics Project, an effort to develop a completely new math curriculum, with materials for students and teachers in grades K-12. The company is also a supporter of the Principal's Scholars program, which prepares minority or disadvantaged students for college studies in business, math, and science.
APPLE COMPUTER Cupertino, California 408-974-2042	$$$$$	**Technology.** Updating that great American tradition of bringing apples to schools, Apple Computer is providing classroom computers nationwide for low-income, minority, and disabled students and to girls studying math and science. It also donates computers to its own Apple Classroom of Tomorrow, a project in five selected schools in various states that is studying the effect of new technology on both teachers and students.
ASHLAND OIL Russell, Kentucky 606-329-3333	$$$$$	**Dropout prevention.** With the average American 13-year-old watching over three hours of television a day, Ashland decided the best way to reach kids was through the flickering screen. Since 1983 the company has run a series of tough-talking TV spots in its Kentucky–West Virginia region encouraging kids to stay in school.
ATLANTIC RICHFIELD Los Angeles 213-486-3511	$$$$	**Student achievement.** When the Bolivian-born math teacher Jaime Escalante proved that Hispanic students in East Los Angeles could excel on an advanced placement examination in calculus, Arco took notice. The result: *Stand and Deliver*, the major motion picture that told his story and that was underwritten by the company. The Arco Foundation continues to support his efforts through a three-year, $150,000 gift to East Los Angeles College, where Escalante directs a summer program that prepares minority high school students for AP exams in calculus and other subjects.
BALTIMORE GAS & ELECTRIC Baltimore 301-234-5631	$$$$	**School partnerships.** BG&E has been blitzing students, parents, and teachers with school reform ideas since 1976. Today employee-mentors coach students in classrooms, workshops teach parents how to support their children's education, and classes help train teachers in good management techniques.
BELL ATLANTIC Philadelphia 703-974-8826	$$$$	**Teacher development.** Take one teacher, add bold new ideas, and presto: You've got a chemical reaction sure to enliven education. Through a three-year, $750,000 grant awarded by the Bell Atlantic Charitable Foundation, the company has joined with the American Association for the Advancement of Science (AAAS) to sponsor a two-week summer skills-enrichment program for some 40 teachers from the Middle Atlantic region.

$ Under $100,000 **$$** $100,000–$499,999 **$$$** $500,000–$999,999 **$$$$** $1 million–$4,999,999 **$$$$$** $5 million or more

COMPANY location	ANNUAL CONTRIBUTIONS TO EDUCATION	PROGRAM HIGHLIGHTS
BELLSOUTH Atlanta 404-249-2390	$$$$	**Adopt-a-school, teacher grants.** BellSouth has built a direct hookup to the future through its subsidiaries, which have adopted more than 100 schools. In addition to encouraging regular involvement of employees as mentors, the company awards mini-grants to schools or individual teachers to fund innovative projects.
BOEING Seattle 206-655-1035	$$$$$	**Partnerships with schools, teacher grants.** Boeing is so serious about the need for a qualified future work force that it assigns company representatives, called education managers, to local schools and school districts where the company has operations. The managers put together partnerships, ranging from individual tutoring to systemwide improvements. Boeing also invites teachers to participate in company management classes.
BURGER KING Miami, Florida 305-378-7096	$$$$	**Academies.** Burger King knows how to get kids' attention. Last fall, in partnership with the Justice Department and Cities in Schools, a national dropout prevention organization, the company established the Burger King Academy program for high school students. Each of the six academies—in Philadelphia, Miami, West Palm Beach, San Antonio, Sacramento, and Long Beach, California—works with up to 125 students, encouraging them to graduate.
CAPITAL CITIES/ABC New York City 212-456-7125	$$$$$	**Literacy.** Cap Cities/ABC is using a powerful weapon in the fight to make literacy alluring: TV stars. The company has teamed with the Public Broadcasting Service to produce Project Literacy U.S., or PLUS. The program features famous faces on the ABC network lauding the joys of reading.
CENTERIOR ENERGY Independence, Ohio 216-447-3232	$$$$	**Teacher development.** Centerior Energy believes as much in building mental pipelines as gas ones. Through its Educational Services Program, the company attempts to add sizzle to science education by underwriting teacher workshops, sponsoring classroom energy projects, and supplying education consultants.
CENTRAL FIDELITY BANKS Richmond 804-782-4000	$	**Adopt-a-school.** On the theory that it is never too soon to know about money, Central Fidelity has opened a minibank in an adopted school, Chimborazo Elementary in Richmond, where students open an account with $25 and make transactions monthly. Most of the accumulated savings are used toward class field trips.
CHAMPION INTERNATIONAL Stamford, Connecticut 203-358-7000	$$$$	**School reform.** Champion has given the public school system of Stamford, Conn., $2 million toward restructuring local middle schools. Plans include creating a math and science magnet school, to open in 1991, and providing more individual attention for students, thanks to added advisers and teachers.
CHASE MANHATTAN CORP. New York City 212-552-9221	$$$$	**Teacher development.** Chase's chief concern is bad writing. By 1993 the company will have contributed $735,000 to fund the Chase/Lehman College Writing and Learning Project. Some 250 teachers in all disciplines are chosen from five New York City junior high schools and trained at a four-week summer program; the idea is to encourage writing in all subjects, including mathematics.
CHEVRON San Francisco 415-894-3800	$$$$$	**Student achievement.** If special enrichment programs work for high achievers, why not try them on students struggling to learn? That's the idea behind Chevron's $1.5 million, three-year grant to the Stanford University Accelerated Schools program. Operating in 39 schools nationwide, the program targets "at risk" children who live in poverty, come from single-parent families, or have limited English skills. Instead of emphasizing remedial work, the program aims to propel them far beyond minimum requirements so that they "catch up" by sixth grade.
CHRYSLER Highland Park, Michigan 313-956-2726	$$$$$	**Literacy.** Not everyone who drives can read a road map—or the simplest instructions. Chrysler hopes to remedy that by building literacy skills early on. Through the Reading Is Fundamental organization, the company has designed a literacy motivation program for first-graders in all cities where plants are located.
CIGNA Philadelphia 215-523-2583	$$$$	**School partnerships.** In the spirit of neighborliness, Cigna has made a three-year, $1.5 million commitment to assist five interrelated Philadelphia schools. The components in the model program include professional training for teachers and educators, as well as new teaching aids and equipment. Cigna has pledged to hire up to 20 graduates annually.

COMPANY location	ANNUAL CONTRIBUTIONS TO EDUCATION	PROGRAM HIGHLIGHTS
CITICORP New York City 312-993-3064	$$$$$	**Dropout prevention, adopt-a-school.** Knowing the neighborhood is a retail banker's business. Few are working the connection better than Citicorp's Florida unit, which is helping the reform effort in the Dade County public schools. Over the past two years the company has spent $60,000 to support the Citicorp Success Fund, a dropout prevention program that provides small cash grants for those who design innovative solutions to the dropout problem. Employees at the bank's 16 local branches host neighborhood meetings with Hispanic teachers and set up partnership activities with local schools.
COLGATE-PALMOLIVE New York City 212-310-3064	$$	**School partnership.** Colgate is sponsoring the restructuring of Wadleigh Junior High School in Harlem, where employees serve as members of advisory boards and provide technical advice.
COCA-COLA Atlanta 404-676-2680	$$$$$	**Dropout prevention.** Staying in school, says Coke, is the real thing—and the company is making sure that potential dropouts get the point. It provides major funding for the Partners for Valued Youth program in San Antonio, which targets Hispanic middle-school children who are at high risk of dropping out. What's unique about the program is that the older children tutor younger children. Both sides add to their skills—and their self-esteem.
CONNECTICUT MUTUAL LIFE INSURANCE Hartford 203-293-5170	$$	**School funding alliance.** Along with school administrators, teachers, and students, Connecticut Mutual employees run a special fund to pay for projects that the Hartford public high school cannot afford. The company endows the fund. In the 1988-89 school year, the alliance designated $15,000 to projects ranging from the construction of a dance floor to the installation of a student mural.
CONSOLIDATED EDISON OF NEW YORK New York City 212-460-4600	$$$	**Dropout prevention, literacy.** Con Ed wants to turn on mental light bulbs. Its primary focus is on students at risk of dropping out. In addition to helping them academically, the company sponsors programs addressing teen pregnancy and substance abuse. In some cases parents as well as their children receive assistance. Con Edison also puts $320,000 toward a Learn to Read literacy program.
CONTINENTAL BANK CORP. Chicago 312-828-2345	$$	**School partnerships.** Continental Bank believes in compound interest. The company became a partner not only with Orr Community Academy in Chicago but also with the ten economically-disadvantaged elementary schools that feed into it. To lower dropout rates, the company developed a parenting skills class and day care center for students with children, and it has worked with early education specialists at DePaul University to create and implement a teaching program based on the everyday use of math.
ADOLPH COORS Golden, Colorado 303-279-6565	$$$$$	**Literacy, child care in schools.** Recognizing that illiteracy often runs in families, Coors has committed $40 million over the next five years to promote the Coors Literacy–Pass It On campaign. The company also spearheaded a drive to provide before- and after-school child care in the elementary schools of Jefferson County, Colorado.
CRAY RESEARCH Minneapolis 612-334-6445	$$$$	**School partnerships.** Cray's interests lean, understandably, toward math and science. Last year it gave $500,000 to its 70 school partners in northwest Wisconsin for math and science initiatives and staff development. Cray also funds and runs Cray Academy, a summer school to help brush up skills of K-12 teachers.
EASTMAN KODAK Rochester, New York 716-724-4408	$$$	**School reform.** Kodak is almost a picture-perfect example of an involved company. On the local front, it has helped drive Rochester's Brainpower program, which coordinates business efforts to improve the city schools. The company has also provided a full-time executive to Brainpower and $300,000 in funding on its own. On the national level, Kodak is underwriting a "stay in school" speaking tour by former NFL star Alan Page. In a related essay contest, called the Kodak/Alan Page Challenge, fourth-graders in nearly 50 cities compete to win tickets to the NFL Pro Bowl.
ENTERGY New Orleans 504-569-4720	$$	**Literacy.** A strong believer in literacy as the most important steppingstone to a better life, Entergy has opened training labs in Arkansas, Louisiana, and Mississippi and promotes them through advertising and an 800 hotline.
EQUITABLE LIFE ASSURANCE New York City 212-554-1101	$$$$	**Student motivation.** This year, Equitable is the lead company in the annual Summer Jobs program sponsored by the New York City Partnership, a business-education collaborative. The program places economically disadvantaged city students in summer jobs ranging from bank clerk to machine operator.

COMPANY location	ANNUAL CONTRIBUTIONS TO EDUCATION	PROGRAM HIGHLIGHTS
EXXON New York City 201-765-3004	$$$$$	**School reform, teacher development.** Exxon is no paper tiger in its support of public education. Its Education Foundation, established in 1955, gave over $19 million to educational programs in 1988. In 1987 the foundation created an elementary and secondary school unit, to help teachers cope with an increasingly diverse body of students, to foster more flexible education programs, and to restructure elementary schools.
FEDERAL NATIONAL MORTGAGE ASSOCIATION Washington, D.C. 202-752-7000	$$	**School partnership.** Its acronym may sound hopelessly old-fashioned, but Fannie Mae's drive to encourage kids to graduate is anything but. In 1988 the company committed $1 million over ten years to inspire students at H.D. Woodson High School in inner-city Washington, D.C., to stay in school. Each semester, students whose grades are B or better are invited to enroll in the Futures 500 club; each member gets $500 per semester toward college, as well as a Fannie Mae mentor and a summer internship.
FORD MOTOR Dearborn, Michigan 313-390-7230	$$$$$	**Academies.** True to its manufacturing roots, Ford is leading the way in technical education. A new program, the Ford Academy of Manufacturing Sciences, has been developed in conjunction with the National Academy Foundation pioneered by American Express. To be launched in Novi and Detroit high schools next fall, the program will give juniors and seniors elective courses in manufacturing and technology.
GENERAL ELECTRIC Fairfield, Connecticut 203-373-2211	$$$$	**Encouraging students to go to college.** GE's new College Bound initiative is impressive both in funding—$20 million—and in scope. Launched last year in five schools in Albuquerque, N.M.; Cincinnati; Hendersonville, N.C.; Louisville, Ky.; and Milwaukee, the program aims to double the number of college applicants from selected inner-city schools by the year 2000 through use of vigorous mentoring and tutoring programs.
GENERAL MILLS Minneapolis 612-540-4351	$$	**Creating a magnet elementary school.** General Mills advocates individual attention for students. Accordingly, its General Mills Foundation, in cooperation with the Minneapolis public schools and teacher federation, has established an alternative school for K-6 students. Opened in 1988, the Minneapolis Public School Academy has fewer frills (no music and art specialists) and a lower student-teacher ratio. To encourage parental involvement, General Mills also funded the installation of telephones in classrooms and answering machines in teachers' homes.
GENERAL MOTORS Detroit 313-556-3577	$$$$$	**Student achievement.** General Motors is trying to rev up student interest in science and math by giving an annual grant of $225,000 to Mathcounts, the national mathematics competition for junior high students originally launched by CNA Insurance Cos. in 1983. In addition, GM's Explore the Possibilities program, which includes videos and teacher manuals, attempts to spark interest in engineering and the skilled trades—especially among women and minorities—through case studies.
GLAXO Durham, North Carolina 919-248-2100	$$	**Dropout prevention.** "Be cool, stay in school" is the theme of Glaxo's new program designed to discourage middle-school students in North Carolina from leaving school. Over 10% of its North Carolina work force tutors students in Durham public schools. Kicking off the project is a 31-school speaking tour by James "Bonecrusher" Smith, the only heavyweight boxing champion to have a college degree. Schools will then participate in a creativity contest to reinforce the stay-in-school message.
GTE Stamford, Connecticut 203-965-2828	$$$$$	**Teacher development.** Through its GTE Foundation, the company has focused on science education. The GIFT, or Growth Initiatives for Teachers program, provides selected teams of teachers with $5,000 for professional training and $7,000 for a school-enrichment project. Funding for 1990 totaled $1 million. Another $1 million was allocated to the GTE/PTA early alcohol and drug abuse prevention program, which uses local parent-teacher associations to provide chemical-abuse information to parents of third- to sixth-graders.
HARRIS Melbourne, Florida 407-727-9126	$$$$	**Teacher development.** Want to win a science fair? Move to Brevard County, Harris's home, which since 1980 has had more winners at the International Science Fair competitions than any other school district in the world. Besides sponsoring the district competition, Harris has, for the past eight years, paid for math and science elementary teachers to attend classes at the Florida Institute of Technology.

COMPANY location	ANNUAL CONTRIBUTIONS TO EDUCATION	PROGRAM HIGHLIGHTS
HARRIS BANKCORP Chicago 312-461-6660	$$	**Management training for school council members.** Through its aptly named HOPE, or Help Our Public Education program, Harris encourages Chicago employees to run for election to their local school councils. The bank gives employees time off with pay to campaign—and, if elected, to attend council meetings—and trains them in the laws governing school councils.
HASBRO Pawtucket, Rhode Island 212-645-2400	$$$	**School reform.** Reaching kids isn't just fun and games for Hasbro. The company has donated over $1 million over three years to New York's College of Human Services to revamp school curriculums in four elementary schools across the country. The new course of study would involve teaching all subjects simultaneously around a single purpose or theme.
INTERNATIONAL BUSINESS MACHINES Armonk, New York 914-765-1900	$$$$$	**Employees as teachers, community outreach.** Big Blue is a big believer in education, with the funding to prove it: $58 million in 1989. It is equally generous in encouraging employee participation. Among its nationwide initiatives: a faculty loan program, which allows employees to serve full time as teachers or administrators in institutions that focus on the disadvantaged, minorities, women, and the disabled, and a community-service assignments project in which employees work full time with community organizations, including high schools.
INTERNATIONAL PAPER Purchase, New York 914-397-1581	$$$$	**Academic achievement.** Each year, International Paper awards grants to individual schools whose proposals best fit the theme of the year; the theme for 1990-91 is "Learning Through Participation." The current prize pool: $500,000.
ITT HARTFORD INSURANCE GROUP Hartford 203-547-3794	$	**High school work-study.** Going STAG—becoming a member of ITT Hartford's Skills Training Advancement Group—is the hot ticket for local high school juniors. Group members spend a half day working and a half day in the Hartford Education Center in a special summer program. The following September, selected students begin working part-time at Hartford Insurance, which can lead to full-time employment.
JOHN HANCOCK FINANCIAL SERVICES Boston 617-572-5176	$$$	**Student achievement.** John Hancock's five-year-old Heart program—the Hancock Endowment for Academics, Recreation, and Teaching—funds innovative academic and athletic programs in Boston middle schools through a $1 million endowment. To date, 117 programs have been launched with grants totaling $483,000.
JOSTENS Minneapolis 612-830-8429	$$$$	**Student motivation.** The old carrot routine is working in Jostens's two-year-old Renaissance Program, which rewards junior high and high school students who achieve good grades and behave well. Qualifying students are entitled to such privileges as reserved parking, priority registration, free admission to athletic and social events, discounts at the school bookstore, exemption from final exams, and designer clothes. Participating schools report an increase both in attendance and in top grades.
KELLOGG Battle Creek, Michigan 616-961-2000	$$$$$	**Child development, literacy.** Kids aren't just consumers to Kellogg. In September 1989 the Kellogg Foundation donated $3.7 million to the Nation of Tomorrow project at the University of Illinois at Chicago. The project, involving four low-income neighborhoods in Chicago, helps parents learn how to be effective, increases the availability of day care, and expands school health programs. On the national front, Kellogg made a $1.5 million contribution in 1989 to *Reading Rainbow*, a highly praised public television show that motivates young children to read.
LINCOLN NATIONAL Fort Wayne, Indiana 219-455-2000	$$	**Student achievement.** Top juniors in the Fort Wayne high schools spend seven weeks studying applied and theoretical math with employees and other math professionals through Lincoln National's math scholars program.
MARTIN MARIETTA Bethesda, Maryland 301-897-6211	$$$$	**Teacher development.** While other companies focus on students, Martin Marietta is going after the teachers. The company has endowed a $1 million fellowship at the University of Tennessee so that outstanding elementary and high school math and science teachers from throughout the South can attend a special summer program.
MATSUSHITA ELECTRIC CORP. OF AMERICA Secaucus, New Jersey 201-392-4132	$$$$	**School reform.** Matsushita knows a good American investment when it sees one. Through the Panasonic (formerly Matsushita) Foundation, the company underwrites programs in cities big (San Diego and Miami) and small (Santa Fe) that help local teachers improve elementary and high school education.

COMPANY location	ANNUAL CONTRIBUTIONS TO EDUCATION	PROGRAM HIGHLIGHTS
MEAD Dayton, Ohio 513-495-3231	$$$$	**Teacher development.** The company will parcel out $500,000 this year in mini-grants to outstanding teachers for innovative classroom projects, as well as to employees involved in schools.
MERCK Rahway, New Jersey 201-594-6353	$$$$$	**Student achievement.** Merck, teachers, and test tubes are proving a heady combination. The company spent $600,000 in 1989 toward revamping science curriculums, updating science education for teachers, and preparing students for careers in the field.
MINNESOTA MINING & MANUFACTURING St. Paul 612-737-3781	$$$$	**Student achievement.** Looking for skilled scientists? Getting to them early is 3M's idea. Through its Visiting Technical Women and Visiting Wizards programs, the company sends employees into Twin Cities area schools to encourage young women—and men—to study science.
MNC FINANCIAL Baltimore 302-453-9930	$$	**Dropout prevention.** You've got to give MBNA America, MNC Financial's MasterCard issuer, credit for putting itself on the line. The company has made a pledge to Gallaher Elementary School in Newark, Delaware, that no child will fail. Through its partnership, the company provides tutoring and counseling—so far 75 employees have volunteered—and has even loaned an executive to run the school's reading program.
MOBIL New York City 212-883-3201	$$$$	**Adopt-a-school.** Although 95% of Mobil's donations currently go to higher education, the company has adopted 15 schools. It has also targeted money toward enticing women and minorities to enter scientific fields.
MONSANTO St. Louis 314-694-4596	$$$$$	**Student achievement.** Monsanto is another corporation that wants to interest minorities in science. The Monsanto Fund has given $500,000 to the University of Missouri at St. Louis toward the so-called Bridge Program, which promotes minority science education in local St. Louis schools. The program includes five-week summer math and science academies, as well as in-school programs and mentors, and college scholarships.
MOTOROLA Schaumburg, Illinois 708-576-2901	$$$$	**Administrator development.** Motorola recently opened its in-house Manager of Managers program to local school superintendents. Participants learn to think creatively, champion change, and make sound business decisions.
NCNB CORP. Charlotte, North Carolina 704-374-5000	$$$$	**School reform.** Ex-Marine Hugh McColl, NCNB's chairman, is looking for a few good men—and women—to lead the South to educational success. The company has donated $1 million to the Southern Regional Education Board to establish a Leadership Academy for teachers, principals, school board members, and others. A second $1 million has been earmarked as prize money for those schools that set performance-based plans—and achieve them.
NYNEX New York City 212-395-2363	$$$$$	**Family education.** New York Telephone provided a $200,000 grant to the New York City Mission Society to educate preschool children and their parents about good work-study habits.
PACIFIC TELESIS GROUP San Francisco 415-394-3000	$$$$	**School reform.** Something of a visionary, the company has committed $2 million over the next five years to its Education for the Future experiment. The six participating schools in the program, scattered throughout California, are expected to define a vision and create a model for the future, complete with restructured curriculums.
PEPSICO Purchase, New York 914-767-7214	$$$$	**Dropout prevention.** Pepsi's million-dollar Pepsi School Challenge program uses a variety of means, from financial incentives to mentor groups, to encourage underprivileged children in inner-city schools not to drop out. Every student who maintains a C average, attends school regularly, and stays drug-free at the first two test-site schools (in Dallas and Detroit) is eligible to become part of the Challenge team, garnering tuition credits and lots of personal support.
PHILIP MORRIS New York City 212-880-5000	$$$$$	**Literacy, minority education.** Philip Morris's educational efforts are as diverse as its tobacco and food businesses. Sample programs: the Philadelphia Mayor's Commission on Literacy, an adult literacy program to which Philip Morris has pledged $1.5 million over three years, and a five-year, $1 million county youth initiative for disadvantaged families in Milwaukee.
PHOENIX MUTUAL LIFE INSURANCE Hartford 203-275-5000	$$	**School health clinics.** Keeping people active and healthy is not only the best life insurance, Phoenix Mutual reasoned, but also the best policy for good school attendance. Accordingly the company committed $72,000 toward the planning and operation of two clinics in Hartford public schools.

COMPANY location	ANNUAL CONTRIBUTIONS TO EDUCATION	PROGRAM HIGHLIGHTS
POLAROID Cambridge, Massachusetts 617-577-5073	$$$	**Teacher development, school partnerships.** Polaroid's long-term picture includes emphasis on math and science. The company's Project Bridge pays salary and tuition to employees who want to train for second careers as math and science teachers; separately, the company brings in outstanding educators for one-year stints as Polaroid employees.
PROCTER & GAMBLE Cincinnati 513-983-1100	$$$$$	**School partnership.** P&G's Project Aspire, which encourages students to excel, involves some 150 employees in a partnership with Woodward High School in Cincinnati. Each employee-mentor stays with his student for five years—through the first year after high school. The company also contributed over $400,000 last year to the Cincinnati Education Youth Collaborative, an umbrella program that sponsors, among other things, expanded early childhood education and efforts to increase the number of students attending college and entering the job market with employable skills.
PRUDENTIAL INSURANCE CO. OF AMERICA Newark, New Jersey 201-802-9678	$$$$	**Student enrichment.** As befits its name, Prudential believes in prudence. The company's foundation allocated some $700,000 to secondary-school education initiatives in 1988 targeted at urban and minority youth. Among this year's grants: a mobile pediatric health clinic.
RJR NABISCO HOLDINGS New York City 212-446-5775	$$$$$	**School reform.** The future is now, proclaims RJR Nabisco, which last year endowed a $30 million Next Century Schools fund. The grants will go to risk-taking educators with innovative plans to improve student performance. The first 15 grants, totaling $8.5 million, were awarded this year to programs that, among other things, funded school-based management and curriculum change.
ROCKWELL INTERNATIONAL El Segundo, California 213-647-5311	$$$$$	**Student enrichment.** You can't choose a career if you don't know it exists. Rockwell's 20-year-old project ACT, which stands for advanced career training, is designed to introduce students in Southern California to career possibilities through on-site visits and professional mentoring. So far more than 22,000 students in 33 schools have received academic credit for participating in the program.
SEARS ROEBUCK Chicago 312-875-2500	$$$$$	**School reform.** Sears' major local initiative is the Academic Olympics, a Chicago competition that recognizes and rewards the achievements of "average" students in the public schools. On the national level, Sears is a 20-year supporter of *Mister Rogers' Neighborhood*, a perennial kids' favorite on public television. Working with the American Association of School Administrators, its Allstate subsidiary encourages businesses to help solve local school board problems.
SHELL OIL Houston 713-241-6161	$$$$$	**Academic enrichment.** Shell Oil believes in natural resources—kids as well as fossils. The company foundation has given $2 million to the National Urban Coalition to develop and expand a program focusing on improving the mathematics and science skills of minority and female elementary school students. The Say Yes to a Youngster's Future program also provides summer institutes for elementary math and science teachers and sponsors family math workshops.
SOUTHWESTERN BELL St. Louis 314-235-7060	$$$$	**School reform.** Southwestern Bell is all for radical change. It has pledged $1 million to Re:Learning, a project designed to alter the way secondary schools teach. Analytic and reasoning ability, not conventional memorization, are favored here; schoolwork covers fewer subjects, but in more depth.
SUN Radnor, Pennsylvania 215-293-6286	$$$$	**Literacy program.** To stimulate the reading and writing skills of seventh- to ninth-graders, Sun designed and sponsors a four-week summer live-in literacy camp for 50 students from the suburban Philadelphia Chester-Upland school district. A follow-up mentor program is provided throughout the next school year.
TANDY Fort Worth 817-390-3700	$$$$	**Student scholarships.** Tandy believes there's nothing like financial rewards to pique students' interest. Its Tandy Technology Scholars program, which recognizes excellence in science and math, awarded $350,000 in cash stipends and scholarships this year to 200 students and teachers.
TCF FINANCIAL CORP. Minneapolis 612-370-7057	$$	**Local school partnership.** TCF began a partnership with Henry High School in Minneapolis two years ago and since then has developed ten projects in conjunction with the school. Among the highlights: a Power English literacy program that is required of all ninth-graders and that rewards top students with a savings account as well as money to put in it.

COMPANY location	ANNUAL CONTRIBUTIONS TO EDUCATION	PROGRAM HIGHLIGHTS
TEMPLE-INLAND Diboll, Texas 409-829-1313	$$$	**Student scholarships.** A firm believer in community-corporate involvement, Temple-Inland, through its two corporate foundations, awarded $1,000 grants last year to the valedictorians in the 277 public high schools where the company has a major facility.
TENNECO Houston 713-757-2761	$$$$	**School partnership, student scholarships.** Tenneco is also big on local involvement. Its nine-year-old partnership with Houston's Jefferson Davis High School goes far beyond employees' involvement as mentors. One highlight is the Presidential Scholarship program, which provides up to $1,000 per academic year to each student accepted by an accredited college or university.
TEXAS INSTRUMENTS Dallas 214-995-2355	$$$$$	**Early childhood education.** "The earlier the better" is Texas Instruments' motto. The company has donated $288,000 to a model Head Start center for preschool children in Dallas; the money will go, in part, toward a 12-month program (up from nine) and more staff. The company also continues to support a science/engineering magnet school in the Dallas independent school district.
TIME WARNER New York City 212-522-1430	$$$$	**Literacy.** Time Warner, the parent of Fortune's publisher, knows the power of magazines. Its corporate Time to Read program teaches people to read more effectively by using company magazines as resources at 35 sites in 13 states. In 1988-89 nearly 700 volunteers, about half of them employees, tutored over 1,000 students. Other businesses, such as Polaroid and Xerox, also sponsor Time to Read programs.
TIMKEN Canton, Ohio 216-438-3944	$$	**Work-study program.** Timken uses the hands-on approach. Each year minority students with an interest in math and science are recruited for the company's Engineering Awareness Program; they work four hours a week in one of the company's engineering departments and may continue with a full-time summer job.
TRAVELERS Hartford 203-277-4178	$$$$	**Technology.** On the theory that even kindergarten kids can benefit from new technology, Travelers has given a $500,000 grant to the Hartford Early Learning Partnership, a program that encourages early learning through use of computers and hands-on activities.
UNISYS Blue Bell, Pennsylvania 215-986-2867	$$$$	**Technology.** Unisys's major educational thrust is an annual conference for school superintendents at its Epcot facilities in Florida. Last year the 50 superintendents gathered decided to develop new programs aimed at identifying children at risk of dropping out; Unisys also provides hardware, software, and consulting assistance to these model programs.
UPJOHN Kalamazoo, Michigan 616-323-4000	$$$$	**Magnet school.** Upjohn celebrated its 100th anniversary by donating $2 million to build the Kalamazoo Area Mathematics and Science Center. Students from 12 local school districts attend accelerated classes there in math and science and pursue research projects under the guidance of mentors, scientists, and mathematicians from local industry. Upjohn continues to provide help, contributing equipment and encouraging its employees to volunteer.
US WEST Englewood, Colorado 303-793-6578	$$$$$	**Teacher development, early childhood education.** Through its US West Foundation, the company has established a $26 million, five-year effort to support educational excellence. Among the initiatives: an Outstanding Teacher program, in which one teacher from each of the 14 states in the company's service region is selected to receive a $5,000 grant and to compete for a fully paid sabbatical to pursue a particular project. Also under way is US West's Parents as First Teachers program, a three-year, $10 million campaign that brings learning specialists into the home to work with preschool children and their parents.
WELLS FARGO & CO. San Francisco 415-396-5187	$$$	**School reform.** Wells Fargo poured over $200,000 into local schools in 1989; most of the money has gone toward increased parental involvement and school accountability.
WHITMAN Chicago 312-565-3000	$$$$	**Principal recognition.** A primary sponsor of Chicago's Corporate Community School, Whitman awards $5,000 annually to 20 Chicago-area principals it deems outstanding managers.
XEROX Stamford, Connecticut 203-329-8700	$$$$	**Educational research.** Four years ago, Xerox created its Institute for Research on Learning with a $5 million grant. The goal is to explore the use of artificial intelligence in education and to study precisely how children learn in hope of finding the key to more creative teaching.

BUSH'S RADICAL BUDGET PLAN • IBM: TOM WATSON'S TERRIFIC NE

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ABOVE: A pastry-serving lesson at a Marriott Hotel in Poland. Photograph by Ed Kashi.

COVER: Michael Wright, CEO of Super Valu Stores, as photographed by James Schnepf.

THE SERVICE 500/Cover Story

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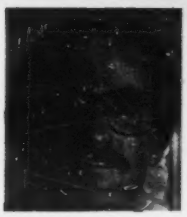

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WHY THERE WILL BE ENOUGH CREDIT

If regulators don't go overboard, the economy will get all the money it needs. Loan demand has weakened, and banks remain eager to finance good projects. ■ *by Vivian Brownstein*

WHETHER they were really speaking to bankers or to their own troops, the regulators who in early May urged banks not to be too tough on customers were responding to growing anxiety about a possible credit crunch. Business, governments, and individuals borrowed $700 billion last year to finance everything from multibillion-dollar mergers to new roads to a running tab at the corner bar. But over the past few months the atmosphere in credit markets has changed dramatically.

The S&L debacle has disrupted real estate financing. Commercial banks are pressed by losses, new capital requirements, and examiners eager to prove how alert they are. Interest rates are up, and higher inflation has made lots of people think that the Federal Reserve is likely to tighten further. Abroad, Eastern Europe suddenly seems like a magnet for the foreign funds that have been streaming into the U.S. Will a credit crunch bring the world economy up short, or at least curtail the eight-year-old U.S. economic expansion?

The answer is no—but with a couple of caveats. First, consider that putative worldwide shortage. For the near future, the higher interest rates expected abroad, especially in Germany, won't keep money from flowing to the U.S. With its huge markets and stable government, it is still where investors want to be. Nor will much leave the U.S., since Americans don't invest heavily in foreign bonds. Over the long haul, however, lower global savings rates and growing capital demands could be on a collision course.

In the U.S. the issue is liquidity—that is, the flow of available capital. Serious problems do exist, even for some well-established companies: The junk bond market is prostrate (see next story). Many loan customers are in a bind—their local S&L folded, or examiners forced their commercial bank to revalue the project. These borrowers have to find new lenders, pay more, and maybe settle for smaller loans than they would like. At least a few won't be able to make any new connection. Banks are more skittish than they were a short while ago, probably more so than necessary. Hyperactive bank regulators have made life unnecessarily hard for some lenders and borrowers.

But as the chart indicates, the total amount of available credit is still increasing—only not as fast as in the go-go years just past. The slowdown mainly reflects a long-overdue mop-up of sloppy lending habits, as well as a decline in legitimate loan demand. The new rule for borrowing: Only quality qualifies. No evidence supports the notion that large numbers of creditworthy borrowers are being shut off.

The squeeze on real estate lending be-

REPORTER ASSOCIATE *Terence P. Paré*

Developers had no trouble financing the Franklin Tower building, now rising in Washington, D.C.

gan with a fall in demand for housing and commercial construction. Part of the Eighties boom should never have happened—apartments, offices, and commercial buildings were put up purely on speculation. Says Robert Dederick, chief economist at Chicago's Northern Trust Co.: "The commercial real estate market was being force-fed money by banks and nonbank institutions such as insurance companies and pension funds." The result: Real estate markets are overbuilt, vacancy rates are high, and some prices have dropped sharply. Developers and their bankers have learned once again that the balloon does not float upward forever.

Some analysts fear that a lack of credit will turn a construction decline into a collapse. That does not seem likely, though many developers are having trouble since they can't count as much on the sources of funds they have grown to rely on. With 17% of S&Ls in or about to be in the hands of the Resolution Trust Corp., the thrifts are now net takers of funds, not lenders (see table). Despite the ever-growing size of the bailout, the worst of the industry's operating problems seem to be in the past, according to James Freund, acting chief economist at the Office of Thrift Supervision. He reports that of the 2,597 S&Ls that had not been taken over, 70% were profitable in 1989. The bulk of losses for the remaining 30% reflected sales of marked-down assets or increased loan-loss provisions. All along, healthy thrifts have remained active in the mortgage and construction loan market. Says Freund: "A substantial segment of the institutions are going about their business successfully."

The regulators have curbed some of the S&Ls' lending activity, however. Complex new regulations effectively raise their capital requirements and limit loans to individual borrowers. Though most S&Ls now comply, the rules are getting progressively tighter. These drastic changes are forcing many to shrink to survive. The harshest restriction, bringing the loudest protests from the industry, is the cap on loans to one borrower—$500,000 except with special permission from the OTS. At best, loan volume for the S&L industry may remain about what it is now.

Commercial banks are under a different sort of pressure. Robert L. Clarke, the Comptroller of the Currency, gets the blame for what some in the industry claim is a paralyzing regulatory assault. His armies of examiners are accused of forcing banks to make huge, unnecessary additions to their reserves, and of all but telling them not to make certain loans.

Some of those examiners have been indeed overzealous, but so far banks continue making new loans for construction and virtually everything else. And why shouldn't they? "It's almost counterintuitive that banks would not make good loans—that's the way they make money," says Federal Reserve Board Governor John P. LaWare. Look at the numbers: Banks added to their loan and securities portfolios at a 6.4% annual rate during the first quarter, about the same pace as in 1989. Commercial and industrial loans declined for several months, but even that drop looks to be over. They bounced up again in March.

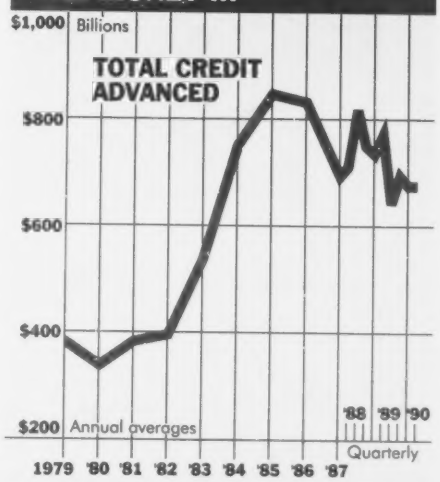
Real estate lending by banks has increased three times as much as other lending. Eugene J. Sherman, chief economist of the Federal Home Loan Bank of New York, points out that the economy isn't suffering from the regulations imposed on the S&L industry because commercial banks, along with the remaining healthy thrifts, are taking up the slack. One reason: Only half as much capital backing is required for mortgages as for commercial loans. Says Brian Bernstein, executive vice president of the Washington, D.C., development company that bears his family name: "Banks are very, very picky these days, but when we have a good deal, they compete against each other to lend us money."

Nonbank sources are supplying plenty of money for borrowers of all stripes. Nonfinancial corporations fill nearly 30% of their short-term borrowing needs outside the banking system. Commercial paper accounts for about 40% of that, some $135 billion in all. The volume of paper issued by corporations jumped 66% in the past two years and is still rising fast. In the same period, corporate bonds outstanding climbed 30% to some $990 billion. That doesn't mean credit is as easy to come by as it was, short or long term. As with banks, standards for borrowing in the open market have become more rigorous, though interest rates on short-term commercial paper are still below those of year-end 1989.

Business is booming for finance companies such as GE Capital and General Motors' GMAC—outfits known as asset-based lenders because they take liens on borrowers' equipment or facilities. Originally set up to underwrite sales of the parent company's appliances or cars, they have long since turned to providing credit for everything from real estate to LBOs. Says Frank Murphy, former chief economist of GE: "These credit subsidiaries aren't saddled with the restrictions and requirements banks have to contend with, and they can lean on the cash flow of the parent corporation for support if necessary."

WHAT ABOUT smaller business borrowers who don't have ready access to funds outside of banks? The evidence is generally upbeat. In its latest survey the Federal Reserve Board reports problems in only a few regions where overbuilding was worst, most notably New England. Month after month, polls of a rolling sample of the 570,000-member National Federation of Independent Business have turned up virtual-

THE MONEY ...



... AND THE SUPPLIERS

LENDER	PERCENT OF TOTAL CREDIT SUPPLIED		
	1987	1988	1989
Finance companies, mutual funds, brokerages	11%	12%	32%
Pensions and insurance companies	30%	26%	26%
Commercial banks	20%	21%	25%
Households, nonfinancial businesses, government	4%	11%	17%
Foreign institutions	15%	14%	11%
Savings institutions	20%	16%	–11%

ly no increase in the difficulty of borrowing. Fewer than 10% of those responding say credit is harder to get or that they expect it to be harder in the future.

If there is no general crunch, why all the moaning? For one thing, credit costs more now. Long-term interest rates have risen a percentage point so far this year. Partly as a result of higher inflation in the U.S. and around the world, FORTUNE expects short-term interest rates to rise a point or more by the end of 1990, pulling long rates up another half point or so.

The big change is in the conditions lenders are setting. Robert Clarke and others from the Comptroller's office repeat a simple message *ad nauseum*: Standards haven't changed, the markets have. Well, yes and no. On paper the standards may not be new, but regulators are applying them in a new way. Speaking privately, many bankers and builders say the crackdown on loose lending practices is overdue, especially in real estate. Says a banker: "It's a good thing the regulatory people are doing, but they should have been doing it before." And a builder: "It is similar to the air traffic controllers. When they start enforcing the rules, there are delays and a lot of complaints."

Speaking privately, many bankers and builders say the crackdown on loose lending practices is overdue, especially in real estate.

Regulators are up front about acknowledging old mistakes. Says Clarke: "We would tell a bank, 'We think you are engaged in loose practices.' But the bank would say, 'Where are the bad loans? The market is booming.' We should have taken enforcement actions where necessary." All too often banks would lend 100% of the expected value of a project—plus enough to pay the interest, at least for a while. According to Leonora S. Cross, director of communications at the Comptroller's office, many appraisals were out of date or nonexistent. These abuses had been going on for a while and obviously weren't up to the standard of good banking practices on the books.

Nonetheless, the message the regulatory officials—Clarke, Fed Chairman Alan Greenspan, and L. William Seidman, head of the Federal Deposit Insurance Corp.—delivered to banks implicitly acknowledged that the crackdown could be too much of a good thing. Already depressed, real estate prices will be pushed down even more as the assets of failed and downsizing S&Ls are sold off. The Resolution Trust Corp. plans to have sold 141 institutions by June 30. But as a result, say some market analysts, appraisers and auditors are under pressure to be overly negative about values when they look at commercial bank loan portfolios for future problems. The concern is that the sell-off will depress the values of those holdings. Some of the Comptroller's bank examiners *are* heavy-handed. According to many complaints, when a bank's loan officer says a loan should be written down by 20%, examiners are rou-

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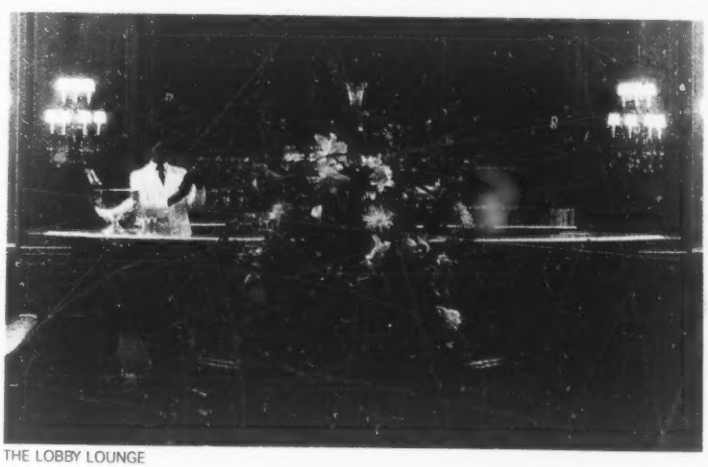

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tinely saying, "Take 50%." So-called—and already infamous—nonperforming performing loans have bankers screaming. Examiners are classifying some loans as nonperforming even when all the payments have been made on time; they're saying the borrower is likely to fall behind in the future. So the bank has to set aside a larger loan-loss reserve and can make fewer new loans.

FORTUNE's economists are not forecasting a recession, but regulatory overkill could certainly increase the chances of one. The message for the examiners: Be sensible. Evaluations needn't assume that the worst will happen in the market—such assumptions are likely to be self-fulfilling. Bankers also need to know that their judgments won't be second-guessed at every turn. As an Ohio banker puts it: "If you try to fix a problem on short notice when it has developed over a long period, the fallout could be serious."

The agencies charged with maintaining a sound banking system are also trying to figure out how to prevent the next mess. That's a refreshing change, but here, too, they could go astray. Clarke's office has developed a screening model for determining when markets are going soft. And Seidman has a similar project to pinpoint weakening real estate markets before they fall apart. These may prove helpful in aiding bank examiners' evaluations. But already a Seidman report, pointing to California as the next potential problem area, has probably scared off some perfectly legitimate projects. If the bubble of expectations bursts suddenly, reverberations from the collapse of one overheated market could echo through the whole economy.

THE TROUBLE is that bank regulators now seem determined to prevent bank failures at any cost. Zero-risk regulation exacts its own penalties. Should regulatory officials impose their judgments about business conditions on people whose profession consists in large part of assessing credit risks? Albert Wojnilower, senior adviser at First Boston, thinks the U.S. is, paradoxically, more regulated now in this age of deregulation than 20 years ago. Though the rules are more permissive, he says, there's also more arbitrary ad hoc intervention in management decisions of a sort that used to be considered unacceptable. The public clearly has a stake in bank management; after all, it's paying for the S&L bailout. But the public's interest will be best served by consistent enforcement of whatever rules are agreed on, leaving day-to-day business decisions to business.

It's too soon to know whether long-term capital shortages will hamper worldwide activity in the Nineties. But clearly, fears of a near-term liquidity crisis are overblown. Don't forget how ingenious credit markets can be. People with money and others who need it are hard to keep apart. Christopher L. Snyder Jr., president of Loan Pricing Corp., recalls the emergence of the Eurodollar market, the modern CD, and commercial paper. All were spawned in credit crunches. What's next? Snyder says that the resale market for corporate loans, which developed because of the pressures on banks during the 1980s, is poised to become much bigger and more sophisticated. Whatever vehicles emerge, count on available capital continuing to flow to legitimate borrowers. F

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JUNK'S BAD TIMES ARE JUST STARTING

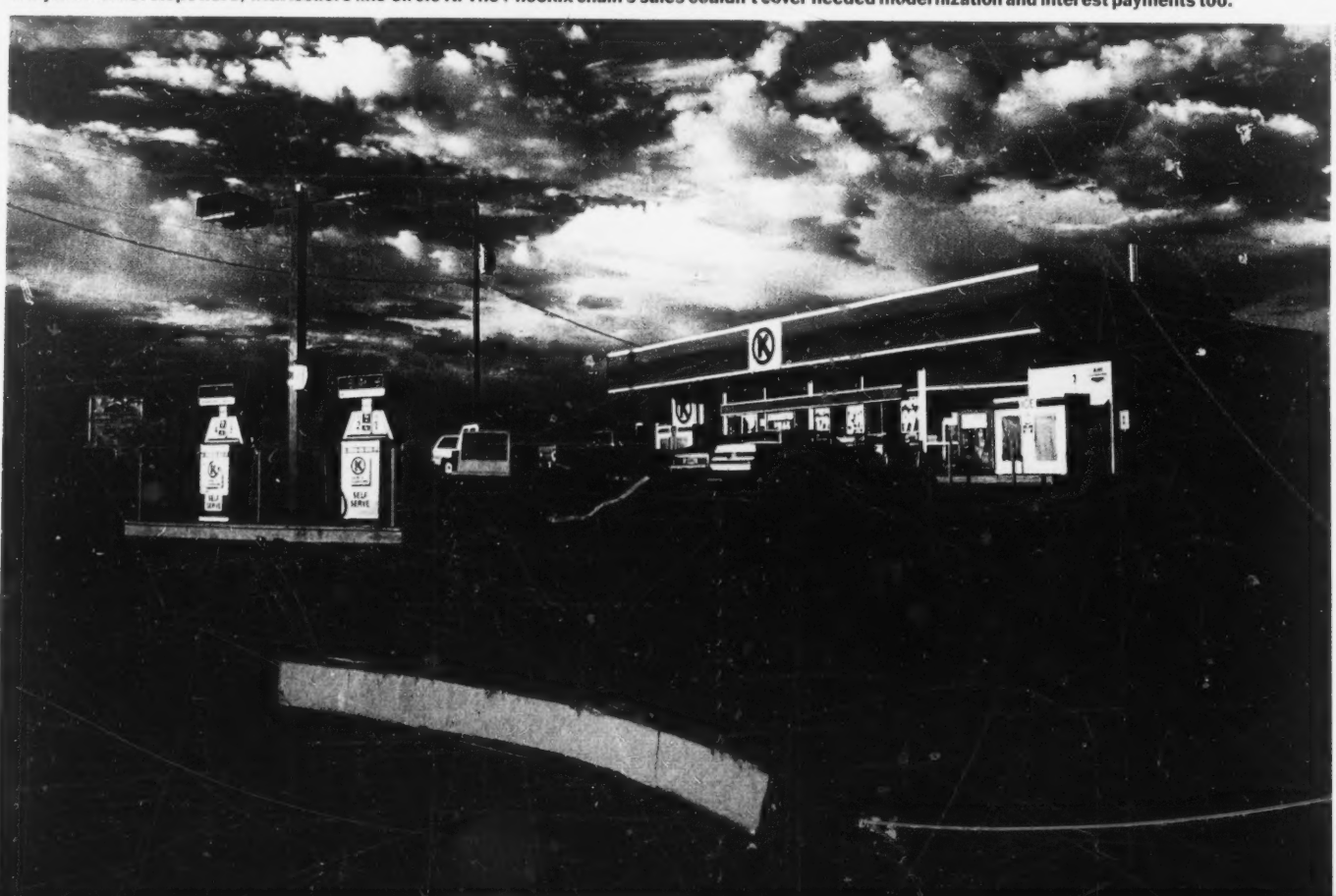
Expect a lot more defaults. The collapse of the high-yield bond market spells trouble for banks, insurers, mutual funds, and people who never touched the stuff. ■ *by Gary Hector*

THE JUNK BOND market's contraction has been even more breathtaking than its epoch-shaping expansion. Just a year ago high-yield underwriters completed their biggest deal ever, the $25 billion leveraged buyout of RJR Nabisco. Then the market began to unravel. By the end of the first quarter of 1990, the average price of an actively traded junk bond had tumbled some 15%. Selling new bonds has become nearly impossible. The well-oiled junk market machinery that churned out bonds at an average rate of $2.3 billion a month last year had trouble selling $375 million in the first *three* months of this year.

Defaults of high-yield bonds like those of Campeau Corp. or Circle K are at record levels, with growing numbers of borrowers operating at the edge of insolvency. Those healthy enough to afford it are buying back their debt—"deleveraging" in the jargon of Wall Street. As they do, they reduce even more the pool of top-grade junk available to buyers. Though it is hard to pin down a number—many junk issues don't trade regularly and hence can't be priced accurately—analysts estimate that the high-yield bond market has shrunk from a total size of around $220 billion at its peak to something in the range of $120 billion to $160 billion.

The consequences will sweep through the economy, touching people and businesses that have never thought much about junk. Lack of financing could curtail new investments by middle-size companies and the jobs they would create. Some insurance companies, and the pension funds that invested in their products, are loaded with the bad old stuff, threatening the future income of retirees. Millions of workers and

The junk market stops here, with issuers like Circle K. The Phoenix chain's sales couldn't cover needed modernization and interest payments too.



WHAT JUNK BOND DEALS HAVE MEANT TO BANKS

BANK	TOTAL "HIGHLY LEVERAGED TRANSACTION" LOANS ($ billions)	HLT LOANS AS PERCENT OF SHAREHOLDERS' EQUITY	PROBLEM HLT LOANS ($ millions)	1989 FEES FROM HLT LOANS ($ millions)	FEES AS PERCENT OF INCOME*
Citicorp	$8.7	86%	$502	$207	15
Bank of Boston	$5.3	253%	$222	$37	53
Wells Fargo	$5.1	175%	$170	$65	11
Chase Manhattan	$4.5	90%	$50	$115	19
Bank of New York	$4.2	152%	$97	$22	5
Security Pacific	$4.1	88%	$49	$67	9%
NCNB	$4.0	135%	$33	Undisclosed	Undisclosed
Bankers Trust	$3.6	151%	$312	$229	38
Chemical	$3.1	84%	$64	$107	24
Manufacturers Hanover	$3.0	89%	$47	$117	34%

* Net income for 1989 restated by Keefe Bruyette & Woods to exclude special items, including one-time special reserves against loans to less-developed countries

With the junk bond market dead and regulators watching closely, banks are making scarcely any loans for LBOs or other highly leveraged transactions. Problem loans are growing and fees from deals evaporating. It all adds up to a likely—and big—hit to some banks' earnings in 1990.

investors who never cared about junk bonds when they were riding high could come to loathe them after the fall.

Where will the pain be most severe? A partial list:

■ Medium-size and large companies that relied on the junk bond market face a credit squeeze. As the market dries up, banks and other lenders are tightening their standards (see preceding story). The private market for junk bonds, in which insurance companies buy them directly from issuer corporations, is as dead as the public market. Says Homer Rees, president of Prudential Capital Corp., the merchant banking arm of Prudential Insurance: "The entire machinery has almost ground to a halt."

■ Overstretched junk bond borrowers, especially small former clients of Drexel Burnham Lambert, will find it hard to survive. The greatest burden will fall on those laden with zero-coupon, payment-in-kind, or reset bonds, designed to keep interest payments artificially low in the first few years after a financing. As the bonds age, the burden on the issuers will grow. Borrowers will be left to make steadily increasing interest payments or to refinance—an unlikely prospect given the market's current illiquidity.

■ Bankruptcies will increase. One contributing cause: a January federal court ruling against holders of LTV bonds. As LTV struggled to keep afloat in the mid-1980s, some of its bondholders agreed to swap their securities for paper of lesser face value. After LTV went belly up, the court held that bondholders who had agreed to the swap could recover only the value of the securities they accepted. Those who didn't swap could go for 100 cents on the dollar of their original bonds. As a result, many bondholders now refuse to exchange securities, making it tougher for troubled companies to avoid bankruptcy.

■ Profits of commercial banks will be hit. Loans to junk-financed companies are increasingly going bad. The collapse of the junk market and pressure from bank regulators have cooled banks' enthusiasm to make new loans for LBOs and other highly leveraged transactions. A drop in loan volume will crimp profits. The fees banks earn for helping finance big junk-powered takeovers will plunge. In 1989 those fees added just under $1 billion to the income of the ten largest commercial banks. As the table above suggests, watch for signs of suffering at Bank of Boston, Bankers Trust, and Manufacturers Hanover.

One veteran says of the private market for junk: "The entire machinery has almost ground to a halt."

■ Investment bankers will lose not only their bonuses but their jobs. They will find it hard to replace the fees they earned arranging LBOs and underwriting junk bonds. Securities Data Co., a Newark, New Jersey, research operation that follows the investment banking business, says that firms earned $808 million in fees from underwriting junk last year. In the first quarter of this year those fees plunged to $11 million.

■ Insurance companies, pension funds, and other institutional investors will suffer as well, though the extent of their wounds may never be disclosed. Accountants permit them to carry junk bonds at or near cost rather than at market value. That means losses are hidden until the insurers sell their securities. If the economy worsens, so could losses on their junk bond portfolios. With insurers holding bonds worth about $60 billion at face value, the damage could easily run to more than $10 billion.

Behind the junk bond market's problems are growing concerns about creditworthiness. What shattered the calm last year was a rush of defaults—amounting to 5.6% of all the companies that have issued junk. That was well above the average annual default rate, much touted of old by junk's advocates, of 3.6% over the preceding 20 years.

The default rate in 1990 and beyond could go higher. Both Moody's Investors Service and Standard & Poor's foresee scary times ahead. Moody's vice president Christopher L. Baldwin predicts that the

REPORTER ASSOCIATE *Mark D. Fefer*

rate could be greater than 10% this year—a forecast that looks more likely every day. With the collapse of Campeau Corp. and the unraveling of William Farley's proposed acquisition of West Point–Pepperell, defaults of rated bonds in the first four months of 1990 totaled about $9 billion—nearly equal to the total for all of 1989.

Traditional measures of credit quality aren't reassuring. More of corporate America's earnings go to pay interest now than at any time in the past. At the end of last year interest for all corporate borrowers equaled 43% of "EBIT," earnings before interest and tax payments. That's up from 18% a decade ago. Total debt amounts to over 90% of net worth, vs. 54% ten years ago. Over the past two years the percentage of securities that Moody's rates either B3 or Caa, those it thinks most likely to default, increased from 19% of the high-yield bonds outstanding to 30%. Ba-rated bonds, the most creditworthy junk, fell from 38% of the total to 25%.

Fears of default have driven junk yields to record highs. In 1989 the spread between junk and ten-year Treasury bonds topped eight percentage points. That's one reason the new-issue market has dried up. In January, for example, Sullivan Graphics, the last LBO to sell junk debt in the public market, paid lenders 15% interest. But to sell the bonds, underwriter Merrill Lynch had to give buyers its 10% equity in the outfit. James T. Sullivan, who led the buyout of his company, calculates that bondholders in effect ended up getting a return of about 18% per annum. Even then, he says, "it was not easy to do. Merrill took a real pounding."

If such high premiums look enticing to you as an investor, consider that they may not be high enough to compensate for the risks you take. Edward Altman, a junk bond expert and professor of finance at New York University's Stern School of Business, analyzed the spreads between junk and Treasuries earlier this year to determine what level of defaults the market appears to be expecting. He came up with a range of 7% to 9%. If the market is wrong, and the Moody's prediction of over 10% is right, junk bond prices these days could be on the high side.

Those who still see the yawning spreads as a reason to buy junk must contend with another problem: A host of big junk bond investors either aren't buying new bonds or are trying to unload the bonds they own, which will continue to depress prices.

Among the most active sellers are the nation's savings and loans, which once held 7% of the high-yield bonds outstanding. Congress has given them five years to unload all their junk. Some $4 billion of the bonds have already passed to the control of Resolution Trust Co., created to work out the problems of troubled thrifts. Another $3.5 billion is on the block from Columbia Savings & Loan, an insolvent S&L in Southern California that is likely to be taken over by the RTC. The RTC won't say how fast it will sell the bonds it owns, but it may well dump $1 billion or more onto the market annually.

Would that keep prices depressed? You bet. Last year, when the high-yield market was absorbing over $2 billion a month of new debt, the sale of those securities might have gone unnoticed. Today, with buyers barely able to handle $100 million a month in new debt, the threat of sales by the RTC hangs over the market like a death sentence.

EVEN MORE OMINOUS is what's happening in the insurance industry. Life insurers own some 30% of all high-yield securities. According to Conning & Co investment bankers who specialize in the industry, the 50 largest insurers stopped adding to their junk holdings last year. If regulators get their way this year, insurers may start selling soon.

The National Association of Insurance Commissioners, a group that advises state regulators, convened a special panel in March to develop a tougher rating system for high-yield bonds and to recommend a limit on total holdings of junk. The changes NAIC is thinking about phasing in over five years would raise the cost of holding junk paper by increasing the reserves insurers have to set aside to cover losses on it. The new rules, already approved by several state regulators, will require some privately placed junk bonds and perhaps 400 publicly traded issues to be backed by higher reserves than the companies have socked away so far, and those reserves will have to be established more rapidly than in the past. Insurers with strong earnings and plenty of capital won't bat an eye, but those without could be forced to sell securities. How heavy the dumping will become should grow clearer later this year, when NAIC adopts final rules.

One company certain to feel the bite is First Executive Corp., parent of Executive Life Insurance Co. of California, a huge bettor on publicly traded junk bonds, and one of the biggest customers of Michael

JUNK LOSSES OF THE BIGGEST INSURERS

INSURER	MARKET VALUE OF JUNK ($ millions)*	AS PERCENT OF INVESTED ASSETS	REPORTED DECLINE IN VALUE	
			As % of cost	As % of bond loss reserve
Equitable Life	$13,942	6%	0.5%	11%
Executive Life California	$9,271	51%	6.1%	104%
Jackson National	$7,112	15%	0.5%	19%
Transamerica Life	$6,699	2%	0.4%	44%
Keystone Provident	$5,210	5%	0.0%	2%
Aid Assn. for Lutherans	$5,175	1%	0.1%	10%
American Family	$4,608	0%	0.2%	7%
New England Mutual	$4,326	3%	0.4%	14%
Pacific Mutual	$4,290	4%	0.4%	14%
Equitable Variable	$3,802	7%	0.1%	2%
Lutheran Brotherhood	$3,466	6%	0.1%	3%
Kemper Investors	$3,108	14%	0.8%	29%
Penn Mutual	$2,761	2%	0.7%	26%
Minnesota Mutual	$2,588	3%	0.2%	7%
General American	$2,034	3%	0.4%	12%
Southwestern Life	$1,640	10%	2.1%	269

SOURCE: CONNING & CO.

Insurers divulge little about losses on junk: They carry many troubled bonds at or near cost, minimizing the reported decline in value. But new regulations could force some to sell at distress prices.

Milken and Drexel Burnham. First Executive took an $859 million hit against profits in the fourth quarter of 1989 to build a reserve against losses in its $7.2 billion junk portfolio. It wrote some bonds down to zero, including those of Southland, the bankrupt owner of the 7-Eleven chain, and established a cushion for losses on other thinly traded securities that are worth far less than par value in today's market. Whether the company's reserve is enough is anyone's guess—First Executive won't reveal the total—especially with junk prices still falling.

FIRST EXECUTIVE'S survival doesn't seem to be in immediate question. A recent review of its financial condition by the California Insurance Commissioner concluded that the company could weather two years of back-to-back 20% declines in the junk bond market, substantial redemptions of its insurance in force, and no growth in new business for five years—about as dismal a set of prospects as the economy is likely to afford. Fred Carr, First Executive's top executive, says any thought that he will start unloading junk is absurd: "We're extremely liquid, and we've got more than $1 billion in capital." Investors worry nonetheless that some combination of regulatory rulings and financial pressures could force a change of mind.

While Carr may not rush to sell, neither will anyone be rushing to buy. The only likely prospects with ample cash are the nation's high-yield mutual funds. But they're the owners of about 30% of all junk bonds, and they're feeling cautious. Many investors have bailed out, and the funds' assets have declined by about 30% between the middle of last year and the end of the first quarter. The funds are hoarding cash, lest another surge of defaults lead to further redemptions.

The only eager buyers are the companies that issued the debt in the first place.

The only eager junk buyers are the companies that issued the debt in the first place. A borrower that can retire a debt with a face value of a dollar by buying it back for 65 cents gets to record a 35-cent profit in the bargain. It is, however, almost impossible to gauge how big this part of the market has become The list of companies buying back their debt in the first quarter is fairly long and includes Owens-Corning Fiberglas, ARA Services, and the Home Shopping Network. A few million here, a few million there, eventually it could add up, especially in today's weak market. Eventually. "It's still a very small market," says John Nickoll, co-chief executive of the Foothill Group, a Los Angeles company that lends money to junk bond issuers that want to buy back bonds.

For would-be investors in junk who still aren't dissuaded, the experts offer one overarching piece of advice: Be discriminating. "The market has not totally lost its senses," observes Martin Fridson, head of high-yield research at Merrill Lynch. "Bonds with very little default risk offer yields of 12% to 13%. Stuff that has done poorly may be at 28%. It's not just shooting fish in a barrel. You have to be much more credit-conscious, much more particular about the securities you buy."

The only way to find bargains, which analysts insist are out there, is with calculator-numbing analysis. Research on high-yield securities is flourishing on Wall Street, with analysts boring into everything, including the fine print in bond agreements. Thanks to their research, one of the best indicators of a bond's risk is its yield: The higher the yield, the higher the risk. Analysts see safety in stable earnings, relatively low leverage, and a tidy pool of capital to protect the investor in case things go wrong. Duff & Phelps, a rating agency based in Chicago, focuses on cash flow available to meet interest charges and excess cash available to repay debt coming due in the future.

Traders say today's biggest bargains are in single-B rated paper or below, but that's also where the highest default rates are. About 7% of single-B's default each year, while a substantially higher percentage of Caa's stop paying. Another problem: It's in the single-B category that buyers start becoming scarce. The spread between bid and asking prices on an individual bond can run to $10 on a $1,000 bond, which means selling it in a hurry could be impossible without taking a huge loss.

THIS IS ALSO the part of the market in which gyrations are all too frequent—both good and bad. Negative stories about Donald Trump's financial situation sent the bonds of the Trump Castle tumbling six points in a single day, while bonds of Ampex Group, a New York maker of high-quality audio equipment, bounced up seven points on the strength of a single positive report from Merrill Lynch.

The penalty for guessing wrong can be harsh. One of professor Altman's most recent studies, financed by the Foothill

HOW JUNK MUTUAL FUNDS HAVE FARED

FUND	ASSETS END OF FIRST QUARTER ($ millions)	PERCENT DECLINE IN VALUE OF JUNK HOLDINGS*	TOTAL RETURN TO INVESTORS YEAR ENDED 3/31/90†
Skyline Monthly Income	$10.3	2%	7.86%
Champion High Yield	$16.8	5%	5.52%
Colonial Income Plus	$155.5	7%	1.49%
Lord Abbett Bond-Debenture	$608.7	13%	0.66%
Vanguard Fixed Income	$809.9	12%	-2.08%
Prudential-Bache High Yield	$2,063.2	13%	-7.34%
Putnam High Yield Trust	$1,744.3	17%	-9.49%
IDS Extra Income	$969.5	19%	-11.48%
Keystone B-4	$683.3	25%	-11.84%
First Investors Fund/Income	$1,014.3	22%	-13.95%
First Investors High Yield	$649.1	17%	-14.62%
United High Income	$875.1	24%	-15.57%
Dean Witter High Yield	$859.3	41%	-20.66%
Alliance Bond Fund High Yield	$138.4	24%	-23.47%

*Reporting dates vary from December 31 to May 3. †Assumes reinvestment of dividends.

SOURCE: FORTUNE, LIPPER ANALYTICAL SERVICES

Losses at high-yield mutual funds reflect the carnage in the junk market. The crash in bond prices has held down total returns to investors despite interest payments that run upwards of 12%.

Today We Saved A Life..

Today a child who had been blind from birth saw the love in her mother's smile.

Today a woman who had been told she could never have a child, gave birth to a beautiful little girl.

Today a man once haunted by depression was able to conquer his sadness and despair.

Today a man was given a new kidney and a whole new life.

Today a little boy, born without legs, walked home from school.

Today an elderly woman, deaf from early childhood, heard the sound of her voice.

And, most precious and wonderful of all, today we saved a life.

Give so that we can do more. And more. And more. Give to your local non-profit hospital.

Give To Life.

National Association For Hospital Development

NAHD

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GOOD AND BAD BUYS IN JUNK

GOOD BUYS	ISSUE	S&P RATING	RECENT PRICE	RECENT YIELD TO MATURITY
Carolco Pictures	14 Sr Nts 1993	B+	$87.00	19.20%
Chiquita Brands	11 7/8 Sub Deb 2003	B+	$97.00	12.34%
Comcast	11 7/8 Sr Sub Deb 2004	B	$95.50	12.56%
Embassy Suites	11 Sub Deb 1999	B+	$92.00	12.51%
Fruit of the Loom	12 3/8 Sub Deb 2003	CCC	$88.00	13.97%
Home Shopping Ntwk.	11 3/4 Sr Nts 1996	B+	$90.00	14.17%
Int'l Technology	9 3/8 Sr Nts 1996	B	$77.75	13.48%
Live Entertainment	14 1/2 Sr Sub Nts 1999	B+	$92.00	15.85%
National Intergroup	11 1/5 Sub Nts 1996	B–	$84.00	14.62%
Orion Pictures	10 Sub Deb 1994	B–	$81.00	17.11%
Quantum Chemical	13 Sr Sub Deb 2004	B	$85.00	15.05%
Stone Chemical	13 5/8 Sub Nts 1995	BB–	$97.50	15.42%
Turner Broadcasting	12 Sr Sub Deb 2001	B	$100.50	11.90%
Viacom	14 3/4 Sub Disc Deb 2002	B	$89.00	13.70%
Vons	13 Sub Deb 2001	B–	$101.00	12.82%

BAD BUYS	ISSUE	S&P RATING	RECENT PRICE	RECENT YIELD TO MATURITY
AMC Entertainment	11 7/8 Sr Sub Deb 2001	B–	$77.25	16.37%
Ames Dept. Stores	13 Sr Sub Reset 1999	B	$26.00	52.30%
Ampex	13 1/4 Sr Sub Deb 1999	B–	$45.00	32.03%
Aztar	13 1/2 1st Mtg. Bond 1996	BB–	$87.50	16.76%
Best Products	12 5/8 Sr Sub Notes 1996	N.R.	$93.45	14.18%
Community Newspapers	0 Sub Deb 1997	N.R.	$28.00	46.12%
Farley	15 5/8 Sub Notes 1998	CCC+	$14.00	108.18%
Forstmann Textile	14 3/4 Sr Sub Notes 1999	CCC+	$41.00	44.39%
Greyhound Lines	13 Sr Notes 1995	B	$46.00	34.00%
Interco	14 1/2 Jr Sub Deb PIK 2003	CCC+	$5.25	244.35%
JPS Textile	13 1/2 Sr Notes 1996	B	$50.00	33.00%
Southland	0 Sr Sub Notes 1997	B–	$18.25	23.61%
Tracor	14 Sr Sub Notes 1998	B–	$15.25	86.90%
Trump Castle	13 3/4 1st Mtg. Bond 1997	N.R.	$65.25	24.23%
Trump Plaza	12 7/8 Mtg. Bond 1998	N.R.	$82.00	17.05%

N.R. = Not rated

A tricky market to pick in: Los Angeles research firm Houlihan Lokey Howard & Zuckin identified 15 bonds worth buying, while Chicago's Duff & Phelps suggested 15 to avoid despite their S&P ratings.

Group, turned up about $33 billion of "distressed" junk bonds that offer yields ten percentage points or more above Treasury securities. Altman says about half of these are likely to default.

For the average investor, the junk bond market is a perilous place, then. Information doesn't flow freely, prices can swing violently, bonds that trade easily one day will be almost completely illiquid the next.

This is the way the market worked before Michael Milken. Junk holders want to believe that their day in the sunshine isn't over, that the financial instrument Milken left behind will regain the force it had when it made managements tremble and ruled the world of takeovers. More likely, when the shrinking finally stops and the final damage reports are in, the market will have returned to what it was before the Roaring Eighties: a modest if treacherous backwater in the world of finance. F

THE MYSTIQUE OF PRIVATE CLUBS

Should you, as a manager, join a club? Absolutely—and more of your colleagues than ever are doing so. Will it help your career? Well . . . is that really the point? ■ *by Alan Farnham*

JEFFREY MACNICOL

A passel of CEOs, a lawyer, and a stray accountant chow down on Denver Club fried chicken.

AROUND THE U.S. private clubs are booming as they have not boomed in ages. Not that long ago even as prestigious a club as New York's Knickerbocker had to recruit new members. But waiting lists now range from one or two years, up to 33 at the Bohemian Club of San Francisco. A man who languished 15 years on the Bohemian's doorstep now sighs happily, "Every time I walk in the door, I say to myself, 'It was worth it.' "

Though clubs' resurgence is a national phenomenon, the physical evidence of it is especially obvious in Manhattan, where new clubhouses are being created for the first time in living memory. One, fashioned from an old midtown structure by Cornell's alumni, opened late last year. Another, similarly created by Penn, should go on line late in 1991. Both report that rosters are filling fast. What's the deal here? Are clubs giving away a complimentary horsehair sofa with each membership?

They don't have to. Clubs provide intrinsic value. As more of them drop racial, ethnic, or sexual barriers to entry, membership can be seen for what it is—a terrific buy—rather than as a political liability or ethical dilemma. To be sure, the precise benefits of a club can be a bit ethereal. Is getting the right membership essential to your assault on the corporate Everest, the vital move that will guarantee you're present when the megadeals are hatched? Short answer: Don't count on it. Longer answer: It's possible but unlikely, and on consideration maybe you don't *want* your club to be a launch pad into executive orbit.

Before going further, let's clarify our terms: We aren't talking here about country clubs. Country clubs are nice, too, in their way, and are enjoying their own spurt of popularity, thanks to the renaissance of golf. But the clubs we propose to discuss view golf as a wanton display of vitality. These clubs don't just lack greens; they lack all external signs of life, vegetable or otherwise. Sited downtown, hidden away behind nondescript facades, their beauties lie entirely within: deep armchairs, coffered ceilings, chicken potpies, match strikers, unopened sets of Scott's Waverly novels, fires in July, puddings, whist tournaments, nude swimming, and martinis. We mean, in short, *real* clubs—city clubs.

Antidiscrimination suits have bulldozed in the doors of all but the most recalcitrant, making membership available to all—theoretically. The New York Athletic Club began admitting women only last July, making it the last domino to fall in a chain of formerly all-male New York City clubs, including the University and the Union League, and the Century Association. The scene of male-female conflict has switched now to San Francisco, where City Hall is torturing the male-only Olympic Club with hot irons. Some of the club's facilities sit on city land. Supervisors are threatening to yank the lease.

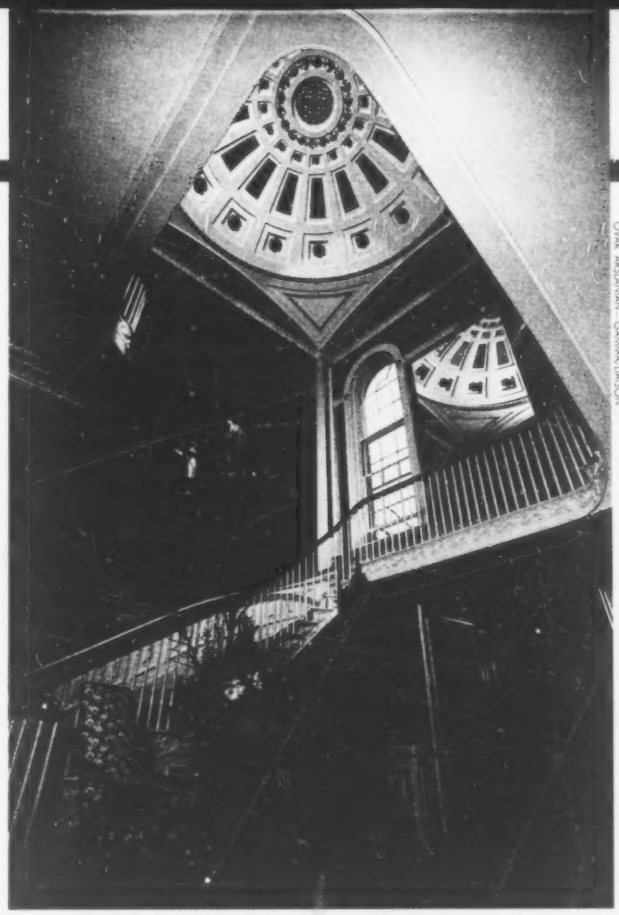
THESE FIGHTS are winding down, though. Across the country, WASP males have pretty much capitulated, and a backlog of eligible women, blacks, Jews, and other minorities stands on clubdom's doorstep. Yet enfranchisement has come so recently that few have crossed the threshold. The majority wait outside, peering uncertainly into the gloom. What will they discover when they enter? Are clubs, as popularly believed, high temples of dealmaking? Or are they merely holding tanks for the indigestible cream of society:

REPORTER ASSOCIATE *Andrew Erdman*

its swells, dimwits, and trust funders?

Let us part the tattered drapes of clubdom, you and I, and go exploring. If, along the way, you see something that you like, by all means get yourself on that club's waiting list *now*. Why the hurry? Undergraduate fraternities and sororities came roaring back to life ten years ago, and legions of young joiners are entering their prime club-seeking years (35 to 45). Beat the rush.

Clubdom has a pecking order, even a cosmology, as suggested by this comment from psychiatrist and social commentator Willard Gaylin: "Any jerk can get into the Princeton Club." That's not strictly true. What Dr. Gaylin means is that the vast majority of clubs—including most university and special-interest clubs (those for card players, actors, engineers, chemists, explorers, etc.)—are more accessible than you might think.



OVAK ARSLANIAN—GAMMA/LIAISON

Coffering to spare: the rococo innards of Boston's Somerset Club

Somewhere below (sometimes well below) clubdom's apex is the business club, such as the Kansas City Club or the Rainier Club, where commerce is encouraged and openly conducted. At or around the pinnacle: the purely social club, such as Chicago's Tavern Club or New Orleans's Boston Club, where openly doing business is a gaffe, if not a violation of the rules. It turns out that business clubs hold scant appeal for ambitious business people.

To the contrary, for men and women of accomplishment, it is social clubs that present an alluring—and dangerous—challenge. Lost in all the talk about discrimination is the fact that social clubs can be as selective as they want—whimsical, even—when it comes to picking

WHERE THE ELITE RETREAT

CLUB Founded	INITIATION FEE & DUES	NO. OF MEMBERS	MEMBERSHIP PROFILE
BOSTON			
Somerset Club 1852	**$2,000** + $2,000/yr.	**575**	Appeals to downwardly mobile sons of Brahmins. CEOs beware: Merely being a member of the corporate elite won't automatically get you through the door.
Union Club of Boston 1863	**N.A.**	**500**	Less Brahmin than the Somerset. Still, it boasts a glossy social patina and manages to tower above the too accessible Algonquin Club of Boston.
Women's City Club of Boston 1911	$575/yr.	**320**	Has admitted men as members since 1985 (now has 30). Mix of Old Guard and younger professionals. Housed in a landmark building with a capacious outdoor terrace.
CHICAGO			
Chicago Athletic Assn. 1890	**$1,200** + $150/mo.	**1,800**	Pin-striped, younger, and markedly more pedestrian than the Chicago Club. The Archbishop of Chicago, Cardinal Bernardin, is a member.
Chicago Club 1869	**N.A.**	**1,300**	The club for the Chicago CEO. Used to be somewhat restrictive, but has since buckled and let in women, including University of Chicago President Hanna H. Gray.
Tavern Club 1925	**N.A.**	**1,200**	Though members include lots of bankers and lawyers, the Tavern prides itself on a liberal smattering of writers and artists. Most [illegible]t on the walls is by members past and present. Business talk is taboo, as it would ruin the creative, cerebral atmosphere.
DENVER			
Denver Club 1880	**$1,000** + $300/mo.	**530**	The Denver's registry reads pretty much like a who's who of Colorado. The club-sponsored Annual Ball kicks off the local social season. Presidential son Neil Bush belongs.
DETROIT			
Detroit Athletic Club 1915	**$2,000** + $169/mo.	**3,600**	Home to the country's largest private bowling league, casually dubbed "white-collar bowling." Noteworthy squash facilities and competitions too.
DULUTH, MINNESOTA			
Kitchi Gammi Club 1883	**$750** + $900/yr.	**540**	Attracts all the local corporate brass and then some. Betty Ford, passing through Duluth, took home a jar of Kitchi Gammi horseradish to hubby, she fancied the stuff so. Club expelled Andrew Carnegie for nonpayment of dues.
HOUSTON			
Houston Club 1849	**$1,800** + $100/mo.	**2,000**	Appeals to the Houston business community. The average age of members has fallen to 54 from 60 a decade ago. Cowboy paintings on walls.
KANSAS CITY			
Kansas City Club 1882	**$500** + $120/mo.	**1,952**	A brand-new $30,000 satellite dish will splash Royals games onto a 70-inch color TV screen in the KCC's very own sports bar. Not only is business allowed on the premises, it is also encouraged. Fax machines abound.

ROBERT HOLMGREN

Allred at the ramparts of the all-male Bohemian

members. They can send an applicant packing for reasons unrelated to race, sex, or religion. An applicant may smell bad. He may wear funny shoes. Members may just not like the cut of his jib.

This means that at this exalted level of clubdom, accomplishment—elsewhere the passkey of American life—counts for zip. Or at least it doesn't carry sufficient weight by itself to guarantee getting in.

Think how exciting this must be to a jaded university president or industrialist! Called before the admissions committee of a top-tier club, he or she stands figuratively naked, stripped of epaulets and other trappings of authority. Nobody gives a damn that the candidate cured cancer or made $1 billion. Overnight, he is flung back into childhood, where only playground rules apply: The other kids either like you or they don't. And if they don't, you're out: blackballed.

The granddaddy of such clubs, called simply The Club, was founded in London in the early 1760s by a group that included Samuel Johnson. James Boswell also joined. Edward Gibbon tried to get in but was blackballed. Why? Johnson scholar Walter Jackson Bate says it was because Gibbon "had a fat face" and was too "sarcastic" in conversation. Gibbon eventually had himself reproposed and somehow managed to be elected, along with Adam Smith. Clearly, anybody with a quill pen could now get in. Boswell wrote, "Smith, too, is now a member of our Club. It has lost its select merit."

The iron whim of social clubs still holds sway at Boston's Somerset, where member Parkman Shaw recalls an embarrassing incident: The chairman of a Boston financial institution believed himself, by virtue of his office, a Somerset shoo-in. Oops. Says Shaw: "On a number of occasions we've had to put these people down. The brazen quality of candidates is just amazing."

WHILE BUSINESS is not done at the Somerset, fraternization among members necessarily takes place, and this may have consequences in the outside world. The uproariously funny story you told last night about four Catholics and a goat may incline your banker and fellow clubman to give you 15 more minutes than he would a total stranger to explain why you need a $100 million bridge loan. But that's it. No contracts are signed, and display of business papers of any kind is forbidden. The overthrow of

CLUB Founded	INITIATION FEE & DUES	NO. OF MEMBERS	MEMBERSHIP PROFILE
LOUISVILLE, KENTUCKY			
Pendennis Club 1881	**$3,000** + $75/mo.	**1,400**	Most CEOs and power players in Louisville are members. Special events include the President's Ball, Country Store Night, and a flurry of fetes during Kentucky Derby week. Never famous for welcoming minorities as members, now finds its street renamed Muhammad Ali Boulevard.
MIAMI, FLORIDA			
City Club of Miami 1984	**$550** + $60/mo.	**600**	If Don Johnson were a CEO, this is where he'd belong. Modern, hip, pastel, enlightened. In a region where clubs still regularly discriminate against blacks and Jews, the membership looks, according to one source, "as if it was put together by a sociologist."
NEW ORLEANS			
Boston Club ca. 1850	**$1,000** + $2,001/yr.	**500**	Named after an ancient and obscure card game played here and nowhere else. Members cannot bring guests from New Orleans. Joining is extremely tough for nonlegatees.
NEW YORK CITY			
Downtown Assn. 1860	**$1,200/yr.**	**1,050**	Caters to white-shoe corporate types. Despite a preponderance of lawyers and investment bankers, the club management does not count the silverware after every meal.
Knickerbocker Club 1871	**$500–$2,000** + $1,400/yr.	**800**	Likes to keep a low profile. Club President John Pierrepont is particularly fearful that the place will get robbed (again) and thus would not tell FORTUNE what curios and artifacts lay hidden in the Knick's catacombs. All male.
OKLAHOMA CITY			
Beacon Club 1942	**$250** + $45/mo.	**800**	Bargain-basement prices. All seafood is flown in fresh from Louisiana, and members can feast on such exotic delicacies as rattlesnake, zebra, elephant, and alligator tail once a year on Wild Game Night.
PASADENA, CALIFORNIA			
Women's City Club of Pasadena 1945	**N.A.**	**400**	Businesswomen, nurses, doctors, judges, and a fair number of retirees consort at the WCCP. Among special events, fashion shows and piano recitals are particular favorites. Club President Matilda Smith, an expert historian and instructor of "The Star-Spangled Banner," points out that husbands are always welcome.
PHILADELPHIA			
Locust Club 1920	**$500–$4,000** + $540–$1,860/yr.	**1,100**	Hefty dues keep the Locust's ranks pretty much limited to wealthy business types who must also be civically and philanthropically minded. Cuisine is German thanks to a core of kitchen staffers who for many years were all descendants of the Locust's first, German, *maître d'hôtel.*
Union League of Philadelphia 1862	**N.A.**	**3,300**	Founded during the Civil War to "preserve the republic and the free-enterprise system." Marshaled support for Lincoln and several times had Abe and staff as guests. More recently, issued a support letter to President Kennedy during the Cuban missile crisis. Has the largest Civil War book collection outside the Library of Congress.

governments is not planned. When the international banking conspiracy meets, it meets elsewhere.

Outsiders find this difficult to swallow, but at many top clubs it appears to be true. People join them to *get away* from business. Says Shaw: "Outsiders think clubs are a hotbed of people moving ahead with their lives. But the Somerset appeals to profoundly downwardly mobile people—people less powerful than their fathers."

BUT DON'T MEMBERS of clubs enjoy great access to other, even higher-powered, members? Yes and no. Through the mechanism of clubs, the paper-box manufacturer's son is supposed to be able to rub elbows with a Rockefeller. (David Sr., for example, belongs to the Harvard, Century, Knickerbocker, Links, and University clubs in New York City.) But today the box boy could just as easily chat up a Rockefeller at the Cardio-Fitness Center in Manhattan, where David sometimes can be seen in his shorts. Almost anyone can join Cardio-Fitness.

The difference is not access, but the quality of access. When a CEO meets a new person whom he knows to be a member of his club, he isn't likely to recoil in horror, since in a sense he has already invited that person to be present: He had the chance to blackball the young pup and didn't. No such invitation is presumed at an exercise facility.

On the other hand, once you're in a club, you may not be really "in." Certainly you're in the door. But once there, you may discover there are clubs within clubs. Nowhere is this more true than at the Bohemian Grove. Some 200 little camps, each with its own name, hold sway beneath the redwoods every summer. And each asks its campers to bed down by invitation only.

Mandalay is at or near the social top. Drop in to borrow a cup of marshmallows and you'll probably get them, but Nicholas Brady and Tom Watson Jr. aren't likely to ask you to stay. Near the social bottom is Aviary, a camp for singers, who, as performing members, get a break on dues.

JAMES SCHNEPF

An Indian gargoyle at Duluth's Kitchi Gammi

Los Angeles attorney Gloria Allred discovered clubs-within-clubs-within-clubs when she became the first female member of Los Angeles's Friars Club. Once in, she found herself less than completely welcome at the club's foulmouthed, testosterone-laden celebrity roasts. Despite some members' hostility, she asserted her right to see Arnold Schwarzenegger insulted. Then she tried to exercise her reciprocal membership privileges with the then still-male Friars Club of New York City. The Friars refused her entry. Henny Youngman came out the front door and heckled her.

But Allred is not to be denied. After filing charges of sex discrimination, she gained access to the club. She still remembers her first lunch there: salmon. "It tasted like victory," she says. But that wasn't her last course. Back in L.A., she found herself excluded

CLUB Founded	INITIATION FEE & DUES	NO. OF MEMBERS	MEMBERSHIP PROFILE
PITTSBURGH			
Duquesne Club 1873	**$7,000** + $1,400/yr.	**2,500**	Most major CEOs in town are members. A portrait of a ram in the club is of note because the animal's testicles were painted out in the 1930s before a group of women were to attend a function. Some years later the eunuch ram was given back his "badges of authority," as they're called in an accompanying plaque.
SALT LAKE CITY			
Town Club 1930	**N.A.**	**220**	It's not that, strictly speaking, the Town Club excludes men from membership. "It's just that we've had none apply," explains President Katherine Dumke. Men can be found across town at the Alta Club. Since it will probably be some time before the Town Club sponsors a Lambada Night, speaker forums will have to do.
SAN FRANCISCO			
Bohemian Club 1872	**Up to $8,500** + $45–$130/mo.	**2,300**	Appealed originally to such bohemians as Jack London. Now, Art Linkletter. About as bohemian as the State Department. Will Rogers scotched own chances for membership by saying annual encampment was "a form of weekend *divertissement* for tired businessmen from which it takes them about two weeks to recover."
The Family 1902	**$0–$8,000**	**700**	The Bohemian Club in miniature, with its own version of the Grove, called the Farm. New members are known as "babies."
Pacific-Union Club (Pacific Club 1852, Union Club 1854) 1889	**N.A.**	**960**	Prospects must submit a battery of recommendations, mostly not from business associates. If these pass muster, would-be's go on a two-year waiting list, then must repeat the entire sponsorship process. The good news is that if you make it, you can swim nude in the Pacific-Union pool. Still all male.
SEATTLE			
Rainier Club 1888	**$2,000** + $82.50/mo.	**1,150**	Lots of corporate brass from the likes of Boeing and Paccar. Commerce now permitted on premises as management accedes to the demands of an increasingly business-obsessed membership.
TOLEDO			
Toledo Club 1889	**$2,400** + $97/mo.	**1,650**	The club for the successful Toledan. Business is allowed and conducted on the premises. Sports an extensive and valuable glassware collection featuring punch bowls and vases *extraordinaire*. Nude swimming allowed during hours when pool use is not co-ed.
WASHINGTON, D.C.			
Metropolitan Club of the City of Washington 1863	**$5,000**	**1,600**	Founded by Civil War generals who, presumably, needed a really good place to get away from it all. Many Senators, ambassadors, and Hill types belong. Nobel Prize winners may prefer crosstown rival Cosmos Club. The library remains untouched by recent renovations. This suits most members, who savor its smoky, mahogany ambiance.

REPORTED AND WRITTEN BY ANDREW ERDMAN

CLUBS YOU CAN'T PEEK INTO

LOUIS PSIHOYOS—MATRIX

Fairbanks at home, where we can see him

Is Douglas Fairbanks Jr. the most clubable man of the 20th century? And if so, why is he shown here in his living room, not in one of his 15 clubs? If membership in the world's finest clubs was, by itself, the test of clubability, then Doug could claim preeminence. At last count he was a dues-paying or honorary member of the Racquet (Chicago); the Brook, Century, and Knickerbocker (New York City); the Myopia Hunt (near Boston); the Metropolitan (Washington); the Newport Reading Room (Rhode Island); and White's, Buck's, the Beefsteak, Garrick, Naval & Military, R.A.C., American, and Travellers' (London).

Clubability, however, presumes much more: the ability to tell spellbinding yarns, to wear suits well, to walk the fine line between being a character and an eccentric, and, above all else, to possess genuine good humor and bulletproof equanimity. A flower in the buttonhole doesn't hurt. Nor (in Doug's case) does having been awarded the Silver Star, the Croix de Guerre, the Order of the British Empire, and Joan Crawford's hand in marriage. What CEO wouldn't want to join a club just to inhale air with such a man?

Seeing as how Fairbanks probably ought to get a commission every time somone joins a club, it seems odd none of his New York City clubs would give permission for him to be photographed inside its building—or, for that matter, outside it. After considering the prospect of Doug's being photographed outside the Brook, club president Dick Frick said—in a voice like the aroma of port made audible—"I'm terribly sorry, but there simply isn't any way I can give Douglas permission to stand in front of the Brook."

Why is that?

Clubs, being the delightful, florid, and somewhat embarrassing self-indulgences of their members, do not like to call one more pixel of attention to themselves than is absolutely necessary. Some get along nicely without street addresses. Social historian Stephen Birmingham observes that American clubmen seldom advertise their memberships. "It's like prep school," he says. "Everyone's a little embarrassed to say he went to one. John Lindsay always used to refer to St. Paul's as 'my high school.'"

The English embrace clubs openly, and numerous guidebooks to English clubs exist. Try to find a guide to U.S. clubs. In a nation that sees itself as straightforwardly meritocratic, clubs suggest the nettlesome possibility that class exists.

from the Friars' gym. She again filed legal charges, and the club capitulated—superficially. Allred told the locker room denizens to gird up their loins: She was coming. They ignored her. Exasperated, she announced that not only was she coming in, but she would be bringing a tape measure. That did it. The men cleared out. "I was interested in naked justice," she insists, "not naked men." (California advisory: Allred is drawing a bead on the Bohemian Club.)

If clubs aren't the path to business nirvana, nor the door to instant intimacy with the celebrated, then why are people so eager to join them? Dr. Gaylin, whose practice runs mainly to club-conscious CEOs and top executives, views membership as an antidote to loneliness, whether the club is the Duquesne of Pittsburgh, home to CEOs Anthony O'Reilly of H.J. Heinz, Charles Corry of USX, Paul O'Neill of Alcoa, and many others, or the Bergin Hunt & Fish of Babylon, New York, home to alleged Gambino crime family boss John Gotti. Even the Greek diner at the corner, says Gaylin, is a club: The regulars draw satisfaction—and part of their sense of identity—from the fact the counterman already knows their wishes by heart.

REAL CLUBS, however, go Greek diners one giant step better and sell what Ralph Lauren only claims to. Implicit in Lauren's advertising is the promise that if you buy a regimental sock you will soon become acquainted with a distinguished older gentleman who wears a pencil-thin mustache and served with Monty in North Africa—someone, say, who looks a lot like Douglas Fairbanks Jr. (see box).

This, of course, is bunk. Yet where Lauren fails, clubs deliver. Join one, and you get an entire style of life, shrink-wrapped. For a couple of thousand dollars a year—less than what you'd spend to join some fitness centers—you get all the pleasures of life at San Simeon. In winter, a fire blazes. In summer, the bar serves lemonade. There likely is a pool, gymnasium, library, dining room, lounge, masseur, barbershop, and a group of bedrooms—not to mention a humidor. Has a button popped off your shirt? A kindly old retainer sews it on.

A club's greatest attribute is its power to soothe. Have you been honked at by cars? Spat upon, shoved, or generally mistreated? Then step inside, out of the city: Here is peace and quiet. A perpetual twilight of orange and yellow lamps. The air fairly echoes with accommodating phrases: "Of course, sir. Yes, sir. No problem. Will you have your usual?" Deference is spoken here.

How sound is clubdom's future? Very. If it depended solely on the appeal of high-ceilinged rooms, dimly lit libraries, and strongly mixed drinks, then the industry might be in for uncertain times. Tastes change. But clubdom stands on stronger legs. Tanning one's self in the warm glow of one's peers' approval is not likely to become onerous any time soon. Not only are clubs a tonic to the ego; they are a haircut and a shave as well. As one sociologist has said: "These people could meet in a barn and be just as happy." F

FORTUNE

THE SERVICE 500

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Construction by Nicholas Fasciano, Photographed by Roberto Brosan

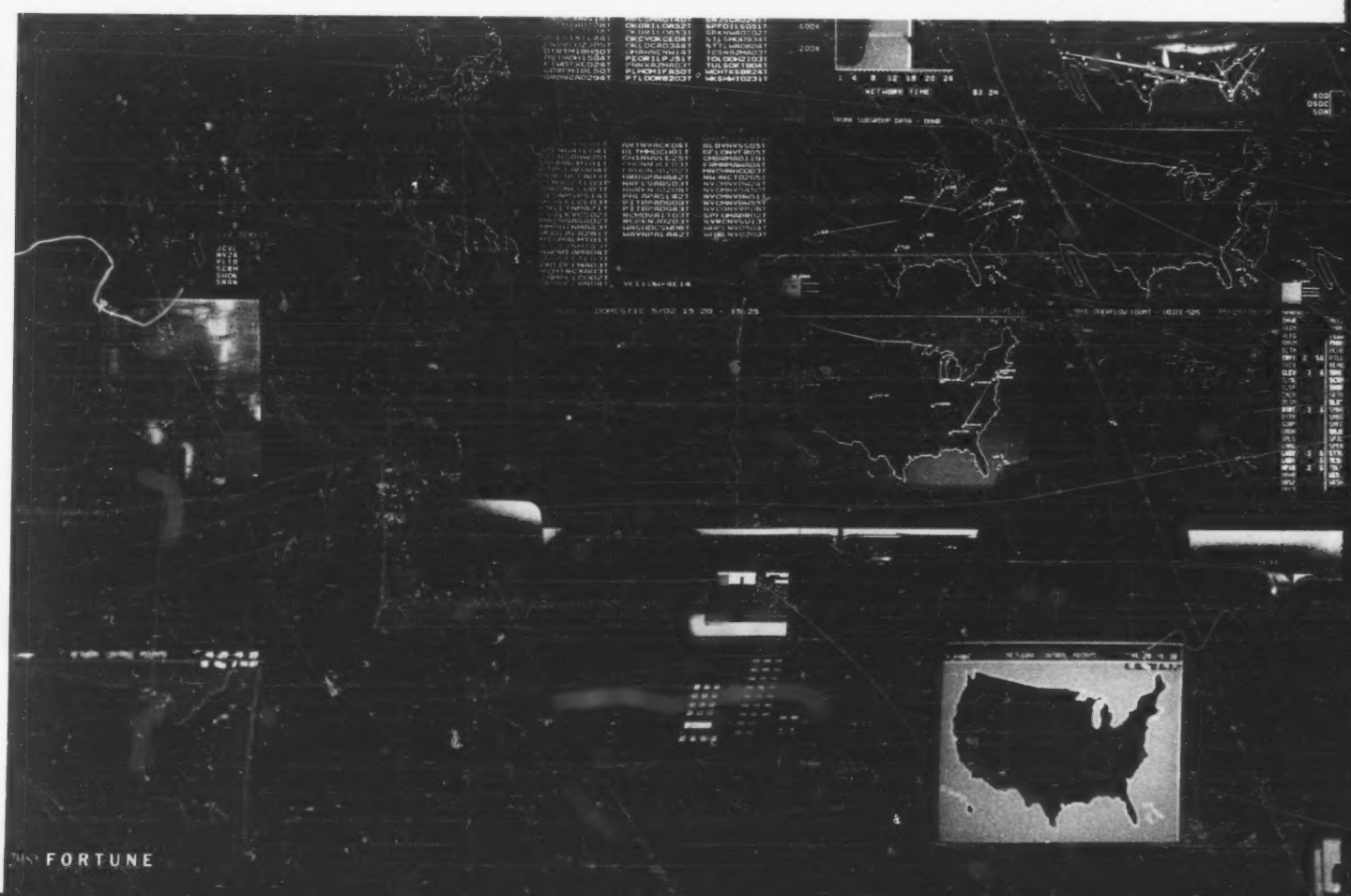
IT SURE PAID TO BE DIVERSIFIED

Despite the upheavals on Wall Street, the continuing saga of S&L failures, and widespread worry over economic slowdown, the FORTUNE Service 500 delivered its second-highest profits ever. As a group, the nation's largest service companies earned $69.7 billion in 1989, a $10 billion decline from 1988's record. (This calculation includes net income of life insurers, though they do not account for profits on a comparable basis with other companies.)

The drop might have been worse had the diversified service companies and the diversified financial companies not done the heavy lifting. Profits for the diversified service group, whose ranks range from glamorous movie studios to down-and-dirty waste processors, more than doubled to $14 billion in 1989. And that was no fluke, since profits did nicely—up 21%—the previous year as well. For one newcomer to the list, Ted Turner's Turner Broadcasting System (No. 93), an improved bottom line meant stemming losses, from $94.5 million in 1988 to $70.6 million last year. And nobody is laughing at Captain Outrageous anymore: TBS rewarded investors with a total return—stock appreciation plus dividends—of 202% last year, the highest of any company on the Service 500 list.

AT&T, the largest of the diversified service companies, had the brawniest profits too. Ma Bell earned $2.7 billion in 1989,

PHOTOGRAPH BY JOHN MADERE



THE SERVICE 500 PROFITS

	1989 $ BILLIONS	1988 $ BILLIONS	CHANGE PERCENT
100 DIVERSIFIED SERVICE COMPANIES	$14.112	$6.344	122.44%
100 COMMERCIAL BANKING COMPANIES	$6.995	$17.501	(60.03%)
50 DIVERSIFIED FINANCIAL COMPANIES	$14.107	$12.587	12.07%
50 SAVINGS INSTITUTIONS	($3.112)	$1.198	(359.77%)†
50 LIFE INSURANCE COMPANIES*	$6.097	$5.668	7.56%
50 RETAILING COMPANIES	$4.971	$9.116	(45.47%)
50 TRANSPORTATION COMPANIES	$4.671	$5.476	(14.70%)
50 UTILITIES	$21.907	$21.592	1.46%

†A decline of over 100% reflects a swing from 1988 profits to 1989 loses. *Net income based on statutory accounting.

her best showing since the kids left home five years before. The money came from lucrative corporate and government contracts; candy store owners, airport authorities, and others choosing AT&T over MCI or Sprint for pay phone service; and continued cuts in employment. Paramount Communications is the group's No. 2 earner, with profits up a startling 281% from 1988. True, the movie business has been good—but not that good—and Paramount's memorable performance was due to the sale of Associates First Capital Corp., its finance subsidiary.

While bad real estate loans and too many junk bonds left banks and thrifts pretty winded, diversified financial companies are striding along. Profits are up 12% for the group. A standout: Continental Group (No. 22), a casualty and property insurer, achieved an eye-popping 17,143% jump in earnings, the biggest increase among all the Service 500 companies. Assisting that pole vault was a $193 million capital gain in its investment portfolio.

The industry's 900-pound gorilla, American Express, recorded a 9.2% revenue increase in 1989 and an 11.5% boost in profits. But a feisty chimp, Primerica (No. 20), the New York consumer finance company run by Sanford I. Weill, American Express's former president, beat that by a mile. Primerica registered the highest sales increase of the group, 467%, and a 79% improvement in profits. The combination of acquiring all of A.L. Williams, its golden goose insurer, and a strong showing by its Smith Barney brokerage unit, lifted Primerica's earnings to $289 million. The stock did all right too, providing investors with a total return of 32.6%.

Both utilities and life insurance companies showed modest improvement in 1989. Premi-

AT&T's Worldwide Intelligent Network reroutes telephone calls during peak periods of congestion.

THE BIGGEST GAINERS, 1989

THE TEN LARGEST INCREASES IN SALES

	SALES RANK	
PRIMERICA CORP.	F-20	467.4%
PARAMOUNT COMM.	S-13	94.4
JWP	S-55	88.3
ENRON	S-4	72.9
BRANIFF	T-44	62.9
INT'L SHIPHOLDING	T-49	58.9
DCNY	F-37	58.0
SYSCO	S-9	56.3
COSTCO WHOLESALE	R-34	47.8
COLUMBIA PICTURES ENT.	S-63	47.4

THE TEN LARGEST INCREASES IN PROFITS*

CONTINENTAL	F-22	17,143.1%
PACIFIC GAS & ELECTRIC	U-6	1,349.7
ARA GROUP	S-23	620.1
BURLINGTON RESOURCES	S-51	535.6
COMDISCO	S-61	535.3
BLOUNT	S-76	498.1
TWENTIETH CENTURY FOX FILM	S-98	459.8
STATESMAN GROUP	F-43	411.6
FIRST FIDELITY BANCORP.	B-20	370.4
TRAVELERS CORP.	F-7	341.7

*Excludes companies that lost money in 1988.

THE BIGGEST LOSERS, 1989

THE TEN LARGEST DECREASES IN SALES

	SALES RANK	
STATESMAN GROUP	F-43	56.7%
LOMAS FINANCIAL	F-35	49.3
SANTA FE PACIFIC	T-17	38.2
AMERICAN GENERAL	F-15	35.7
TRAVELERS CORP.	F-7	34.0
BORG-WARNER	S-44	29.6
PINNACLE WEST	U-34	26.5
LEUCADIA NATIONAL	F-48	21.1
TEXAS AIR	T-6	21.0
AETNA LIFE & CASUALTY	F-4	19.0

THE FIVE LARGEST DECREASES IN PROFITS*

PINNACLE WEST	U-34	13,257.1%
AMERIFIRST BANK	I-40	9,377.8
TRUSTCORP	B-95	8,401.1
UNITED ARTISTS ENTERTAIN.	S-88	4,621.6
ALLIED STORES	R-40	1,900.1

*Decreases over 100% reflect swings from 1988 profits to 1989 losses.

THE FIVE LARGEST LOSSES

		$ MIL.
FEDERATED DEPT. STORES	R-23	$1,503.9
SOUTHMARK	I-34	1,460.3
SOUTHLAND	R-13	1,306.9
J.P. MORGAN & CO.	B-4	1,275.0
BANK OF NEW ENGLAND CORP.	B-21	1,113.3

Sales comparisons exclude commercial banks, savings institutions, and life insurance companies.
Profit comparisons exclude life insurance companies.

um and annuity income for life companies grew 8.7% to $144.7 billion and net income increased 7.6% to $6.1 billion. Utilities managed a low-voltage 0.7% increase in revenues to $233.7 billion, and profits were up 1.5% to $21.9 billion. The hero was Pacific Gas & Electric (No. 6), which supplies the juice for northern and central California. By holding operating expenses steady while serving an expanding customer base, PG&E produced an electrifying 1,350% increase in earnings, the second-highest gain among the Service 500. Net income rose to $900.6 million and PG&E attributed part of its glowing performance to "significant" revenues generated by Diablo Canyon, the nuclear power plant that resulted in a huge write-off in 1988 for cost overruns.

Throughout much of the year, retailers were hobbled both by cautious consumer spending and their own suicidal price wars. Though sales for the top 50 rose 9.2%, earnings plunged a pretty bloody 45.5%. Wal-Mart (No. 3) turned in its customary

KEY TO RANK

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THE MOST PROFITABLE, 1989

THE TEN HIGHEST RETURNS ON STOCKHOLDERS' EQUITY

	RANK	
SERVICEMASTER	S-64	174.1%
PARAMOUNT COMM.	S-13	39.4
MARSH & MCLENNAN COS.	F-49	33.8
ALEXANDER & BALDWIN	T-30	33.5
BLOUNT	S-76	33.2
NIKE	S-59	29.7
VIACOM	S-71	28.7
ALCO STANDARD	S-25	28.7
MARRIOTT	S-5	28.2
RYLAND GROUP	S-72	28.0
THE SERVICE 500 MEDIAN		12.3

THE TEN HIGHEST RETURNS ON ASSETS

	RANK	
PARAMOUNT COMM.	S-13	20.7%
NIKE	S-59	20.2
KELLY SERVICES	S-73	18.0
ALEXANDER & BALDWIN	T-30	17.8
GENUINE PARTS	S-33	15.4
REEBOK INTERNATIONAL	S-54	15.0
MARSH & MCLENNAN COS.	F-49	14.5
LIMITED (THE)	R-26	14.3
MELVILLE	R-14	13.1
WAL-MART STORES	R-3	13.1
THE SERVICE 500 MEDIAN		1.1

THE TEN HIGHEST RETURNS ON SALES

	RANK	
PARAMOUNT COMM.	S-13	24.7%
ALEXANDER & BALDWIN	T-30	24.0
GENERAL RE	F-30	21.6
TEXAS UTILITIES	U-12	18.0
PHILADELPHIA ELECTRIC	U-17	17.3
OHIO EDISON	U-30	16.8
DUKE POWER	U-26	15.6
OVERSEAS SHIPHOLDING GRP.	T-47	15.6
CAROLINA POWER & LIGHT	U-32	15.2
DISNEY (WALT)	S-19	15.1
THE SERVICE 500 MEDIAN		4.1

Commercial banks, savings institutions, and life insurance companies are not included.

profit gains—earnings were up 28% to $1 billion last year, just behind Sears Roebuck's lackluster $1.5 billion on nearly twice Wal-Mart's revenues. (Sears earned that profit from Allstate Insurance and Dean Witter, not from retailing.) U.S. Shoe (No. 44), which sells footwear under such names as Pappagallo and Capezio, enjoyed a 279.4% earnings increase, the highest in retailing. The money came mainly from its Casual Corner and Petite Sophisticate women's apparel chains.

THE WORST PERFORMERS in the service businesses—this won't come as any surprise—were the savings institutions. Overall, the 50 largest lost $3.1 billion, 36 had declines in their assets, and four were taken over by the Resolution Trust Corp. Among the survivors: Bad real estate loans took their toll on Southmark (No. 34), which lost $1.5 billion—the worst in the group—and is now in bankruptcy. Huge holdings in junk bond issues led Columbia Savings & Loan (No. 18) to post the group's second-biggest loss, $591 million.

Commercial bank profits, battered by growing write-offs for bad loans, fell 60% from 1988's record $17.5 billion. The biggest money loser was No. 4, the normally profitable J.P. Morgan & Co., which suffered a loss of $1.3 billion owing to loan write-offs in Brazil and Argentina. By contrast, BankAmerica (No. 3), once the sick man among commercial lenders, had its best year ever, earning $1.1 billion, the second-strongest performance of the group. BankAmerica made its money the old-fashioned way: with higher-yielding loans, lower expenses and credit losses, and getting more customers through acquisitions in the U.S. and a joint venture in South Korea.

A bumpy ride among the major airlines caused profits for the entire transportation group to dive 14.7%. But America West (No. 26), the entrepreneurial Phoenix carrier, waggled its wings at the rest of the industry with a 29% increase in revenues and a 113% takeoff in earnings. Its secret: increased operating efficiency, top marks for on-time performance, and opening new routes to Honolulu, New York, and Washington, D.C.– **Laurie Kretchmar and John Labate**

THE BEST INVESTMENTS

THE TEN HIGHEST TOTAL RETURNS TO INVESTORS, 1989

	RANK	
TURNER BROADCASTING	S-93	202.2%
HOLIDAY	S-65	165.7
COSTCO WHOLESALE	R-34	122.0
CHARLES SCHWAB	F-38	107.0
NIKE	S-59	104.1
FEDERAL NAT'L MORTGAGE ASS'N	F-2	103.2
KEMPER	F-25	99.9
MCI COMMUNICATIONS	S-11	94.5
VIACOM	S-71	84.7
NAT'L MEDICAL ENTERPRISES	S-28	84.1

THE TEN HIGHEST TOTAL RETURNS TO INVESTORS, 1979-89 ANNUAL AVERAGE

	RANK	
THE LIMITED	R-26	53.1%
WAL-MART STORES	R-3	46.1
DILLARD DEPARTMENT STORES	R-33	45.7
STATE STREET BOSTON CORP.	B-61	42.4
MCI COMMUNICATIONS	S-11	39.9
GIANT FOOD	R-35	38.8
BRUNO'S	R-48	37.3
HOLIDAY	S-65	36.6
WASTE MANAGEMENT	S-20	36.1
TOYS "R" US	R-24	35.9

THE FIVE LOWEST

SOUTHMARK	I-34	(93.2)
ATLANTIC FINANCIAL FEDERAL	I-22	(92.2)
LOMAS FINANCIAL	F-35	(91.7)
CENTRUST BANK	I-19	(90.2)
IMPERIAL CORP. OF AMERICA	I-15	(89.7)
THE SERVICE 500 MEDIAN		23.0

THE FIVE LOWEST

IMPERIAL CORP. OF AMERICA	I-15	(24.2)
FINAN. CORP. OF ST. BARBARA	I-35	(23.6)
TRANSCON	T-48	(12.7)
CONTINENTAL BANK CORP.	B-22	(12.5)
LOMAS FINANCIAL	F-35	(10.6)
THE SERVICE 500 MEDIAN		19.8

Life insurance companies are not included in these rankings.

THE MOST PRODUCTIVE, 1989

THE TEN HIGHEST IN SALES PER EMPLOYEE

	RANK	
FED. NAT'L MORTGAGE ASS'N	F-2	$4,598,800
BINDLEY WESTERN	S-67	3,857,414
UNION EQUITY CO-OP. EXCH.	S-87	2,568,594
LEUCADIA NATIONAL	F-48	2,029,560
FED. HOME LOAN MORTGAGE	F-13	1,978,410
PERMIAN PARTNERS	S-41	1,912,108
OGLETHORPE POWER	U-44	1,885,252
STUDENT LOAN MKTG. ASS'N	F-12	1,574,151
ENRON	S-4	1,567,600
SUBARU OF AMERICA	S-58	1,499,556

THE TEN HIGHEST IN SALES PER DOLLAR OF STOCKHOLDERS' EQUITY

	RANK	
ARA GROUP	S-23	$222.90
ALCO HEALTH SERVICES	S-43	147.70
TURNER CORP.	S-30	69.57
MAYFLOWER GROUP	T-34	68.50
HAL	T-46	52.85
BALFOUR MACLAINE	S-77	50.27
STOP & SHOP COS.	R-27	49.90
LANDMARK LAND	F-44	49.18
BRANIFF	T-44	45.37
SERVICEMASTER	S-64	41.40

THE FIVE LOWEST

OGDEN	S-74	$32,591
TW SERVICES	R-31	32,269
BORG-WARNER	S-44	30,066
HILTON HOTELS	S-97	25,592
BEVERLY ENTERPRISES	S-48	22,145
THE SERVICE 500 MEDIAN		194,873

THE FIVE LOWEST

TWENTIETH CENTURY FOX FILM	S-98	$0.73
GULF STATES UTILITIES	U-35	0.72
TEXAS UTILITIES	U-12	0.68
BURLINGTON RESOURCES	S-51	0.60
OVERSEAS SHIPHOLDING GROUP	T-47	0.48
THE SERVICE 500 MEDIAN		2.92

Commercial banks, savings institutions, and life insurance companies are not included.

THE SERVICE 500

THE 100 LARGEST DIVERSIFIED SERVICE COMPANIES

RANK BY SALES 1989	1988	(Major Industry)	SALES[1] $ Millions	% change from 1988	PROFITS $ Millions	Rank	% change from 1988	ASSETS $ Millions	Rank	STOCKHOLDERS EQUITY $ Millions	Rank
1	1	**AMERICAN TELEPHONE & TELEGRAPH** New York (Telecomm.)	36,345.0	3.2	2,697.0	1	—	37,687.0	1	12,738.0	1
2	2	**FLEMING COS.** Oklahoma City (Wholesale)	12,045.3	15.1	80.1	41	22.5	2,689.3	36	741.6	33
3	3	**SUPER VALU STORES** Eden Prairie, Minn.[2] (Wholesale)	10,316.1	10.1	135.4	26	21.1	2,305.1	39	778.3	29
4	•	**ENRON** Houston[3] (Wholesale)	9,869.6	72.9	226.3	15	107.7	9,104.8	4	1,785.9	14
5	•	**MARRIOTT** Bethesda, Md.[4] (Hotels)	8,382.0¶	13.7	177.0	20	(23.7)	6,732.0	8	628.0	43
6	6	**UNITED TELECOMMUNICATIONS** Westwood, Kans. (Telecomm.)	7,549.0	16.3	362.9	10	(28.7)	9,821.3	3	2,076.9	11
7	4	**MCKESSON** San Francisco[5] (Wholesale)	7,515.2	3.0	100.6	36	5.9	2,105.8	46	692.2	39
8	5	**AMERICAN FINANCIAL** Cincinnati (Casualty insurance)	7,285.7	5.6	3.3	74	(96.8)	11,969.1	2	333.0	61
9	13	**SYSCO** Houston[5] (Wholesale)	6,851.3	56.3	107.9	35	24.1	1,869.4	49	642.6	41
10	•	**PACIFIC ENTERPRISES** Los Angeles[7] (Natural gas)	6,797.0	14.6	211.0	16	(5.0)	7,326.0	5	2,169.0	9
11	6	**MCI COMMUNICATIONS** Washington (Telecomm.)	6,504.0	26.6	558.0	6	61.3	6,338.0	12	1,995.0	12
12	8	**FLUOR** Irvine, Calif.[8] (Eng. & constr.)	6,314.0	23.0	108.5	33	92.4	2,154.3	44	720.4	36
13	28	**PARAMOUNT COMM.** New York[8,9] (Movies)	5,941.4¶	94.4	1,465.4	2	280.9	7,065.2	6	3,717.5	2
14	10	**HALLIBURTON** Dallas (Eng. & constr.)	5,708.5	18.0	135.0	27	44.2	4,263.0	19	2,119.1	10
15	12	**ELECTRONIC DATA SYSTEMS** Dallas[10] (Computing)	5,466.8	15.2	435.3	9	13.3	3,918.2	26	1,763.6	15
16	9	**RYDER SYSTEM** Miami (Truck rental)	5,073.4	0.9	46.0‡	56	(76.7)	5,937.5	14	1,486.6	16
17	11	**CAPITAL CITIES/ABC** New York (Broadcasting)	5,059.6	6.0	485.7	7	25.5	6,359.5	11	3,291.9	3
18	15	**WETTERAU** Hazelwood, Mo.[5] (Wholesale)	5,003.0	20.4	43.3	57	12.2	952.1	68	230.0	68
19	21	**WALT DISNEY** Burbank, Calif.[11] (Theme parks)	4,661.7	35.6	703.3	3	34.7	6,657.2	9	3,044.0	5
20	19	**WASTE MANAGEMENT** Oak Brook, Ill. (Waste)	4,477.7	25.6	562.1	5	21.1	6,405.2	10	2,738.0	6
21	14	**DUN & BRADSTREET** New York (Info. services)	4,389.1	2.9	586.4	4	17.5	5,184.2	16	2,184.7	8
22	16	**HOSPITAL CORP. OF AMERICA** Nashville (Hospitals)	4,308.7	4.8	82.6	40	(68.1)	6,879.7	7	564.3	47
23	17	**ARA GROUP** Philadelphia[11] (Food service)	4,243.8	8.3	38.7	60	620.1	1,884.4	48	19.0	94
24	22	**HUMANA** Louisville, Ky.[12] (Hospitals)	4,148.6	20.8	256.0	14	12.7	3,696.6	29	1,327.0	18
25	18	**ALCO STANDARD** Valley Forge, Pa.[11] (Wholesale)	4,145.9	8.8	170.8	22	55.3	1,478.7	55	594.4	45
26	20	**BERGEN BRUNSWIG** Orange, Calif.[12] (Wholesale)	3,929.2	12.7	47.6	53	37.1	985.7	67	390.9	55
27	•	**COMBUSTION ENGINEERING** Stamford, Conn.[14,15] (Eng.)	3,734.2[13]	7.2	N.A.		—	N.A.		N.A.	
28	25	**NAT'L MEDICAL ENTERPRISES** Santa Monica, Calif.[16] (Hosp.)	3,703.0	25.6	143.0	25	(3.1)	3,877.0	27	1,101.0	20
29	23	**GREYHOUND DIAL** Phoenix[17] (Air trav. serv.)	3,621.9	7.4	108.7	31	4.5	5,204.8	15	1,075.0	21
30	26	**TURNER** New York (Construction)	3,564.1	11.5	2.8	76	(24.6)	860.7	69	51.2	89
31	29	**MCA** Universal City, Calif. (Movies)	3,502.1	15.8	191.8	18	16.3	4,211.3	22	1,860.9	13
32	24	**NATIONAL INTERGROUP** Pittsburgh[5] (Wholesale)	3,185.5	(5.1)	(15.7)**	83	—	1,826.0	50	684.7	40
33	30	**GENUINE PARTS** Atlanta (Wholesale)	3,171.4	7.8	199.5	17	10.0	1,291.9	58	971.8	23
34	32	**ASSOCIATED MILK PROD.** San Antonio (Wholesale)	3,035.1	7.4	N.A.[18]		—	550.2	79	151.2	78
35	31	**ENSERCH** Dallas (Natural gas)	2,984.7	3.1	73.4	42	—	3,254.2	32	876.3	26
36	33	**CBS** New York (Broadcasting)	2,961.5	6.6	296.3	12	(74.2)	4,637.9	17	2,394.0	7
37	35	**HARVEST STATES CO-OPS.** St. Paul[16] (Wholesale)	2,921.3	20.4	N.A.[18]		—	435.8	81	173.7	74
38	27	**AMERICAN MEDICAL INT'L** Beverly Hills[12] (Hosp.)	2,776.8	(10.8)	(12.8)	82	(111.1)	3,214.5	33	713.2	37
39	34	**CASTLE & COOKE** Los Angeles (Wholesale)	2,717.8	10.1	94.9	37	(15.5)	2,269.6	40	836.1	28
40	39	**BROWNING-FERRIS INDUSTRIES** Houston[11] (Waste)	2,557.4	23.7	262.6	13	15.7	3,017.2	35	1,241.9	19
41	36	**PERMIAN PARTNERS** Houston (Wholesale)	2,485.7	8.6	(8.0)	80	—	586.9	78	204.3	70
42	41	**ROUNDY'S** Pewaukee, Wis. (Wholesale)	2,331.1	14.5	N.A.[18]		—	371.2	88	59.4	88
43	40	**ALCO HEALTH SERVICES** Valley Forge, Pa.[11] (Wholesale)	2,297.4	11.6	(11.9)	81	(159.1)	768.4	71	15.6	95
44	•	**BORG-WARNER** Chicago[19] (Protective ser.)	2,264.0	(29.6)	88.9	39	(78.8)	2,252.4	41	631.9	42
45	43	**HERTZ** Park Ridge, N.J. (Car rental)	2,253.2	14.6	108.5	32	34.9	3,669.0	30	693.8	38
46	38	**NASH FINCH** St. Louis Park, Minn. (Wholesale)	2,223.8	6.3	13.2	73	(27.6)	380.8	87	157.0	77
47	37	**MORRISON KNUDSEN** Boise, Idaho (Eng. & constr.)	2,169.6	1.2	32.2	63	—	726.0	73	250.5	65
48	42	**BEVERLY ENTERPRISES** Pasadena, Calif. (Nursing homes)	2,126.0	5.0	(104.2)	88	—	1,639.2	53	440.1	53
49	50	**ITEL** Chicago (Wholesale)	2,121.1	29.1	29.9	65	20.6	4,126.5	23	749.2	31
50	44	**BALLY MANUFACTURING** Chicago (Casinos)	2,069.2	10.8	17.4‡	71	(54.2)	3,029.5	34	596.6	44

N.A. Not available.
• Not on last year's list.
† Average for the year; see the reference to "employee" on page 332.
** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 332.
‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and earnings per share" on page 332.
¶ Includes sales from discontinued operations of at least 10%.
[1] Sales include all operating revenues, other income, and revenues from discontinued operations when they are published. Sales also include consolidated subsidiaries, but they do not include excise taxes. All figures are for the fiscal year ended December 31, 1989, unless otherwise noted. All companies on

MARKET VALUE 4/20/90		NET PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from	1979-89 annual growth rate			1979-89 annual average					
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1989/$	1988	%	Rank	1989 %	Rank	%	Rank	Number	Rank	
43,981.5	1	7.4	18	7.2	21	21.2	17	2.50	–	(11.0)	56	63.4	14	18.9	30	283,500	1	1
961.1	44	0.7	72	3.0	51	10.8	57	2.54	4.5	6.9	31	(11.4)	69	17.0	35	22,800	28	2
1,858.4	31	1.3	65	5.9	28	17.4	31	1.81	20.7	13.4	22	20.8	44	19.7	28	39,711	22	3
2,642.7	22	2.3	51	2.5	60	12.7§	51	4.03	161.7	(0.1)	43	65.7	12	13.7	49	6,296	60	4
2,659.9	21	2.1	55	2.6	56	28.2	8	1.58	(19.0)	15.0	17	6.2	56	26.0	12	229,942	2	5
7,993.3	7	4.8	29	3.7	43	17.3§	32	1.72	(30.5)	2.7	37	66.2	11	23.1	17	41,359	20	6
1,299.7	36	1.3	63	4.8	35	14.5	44	2.28	2.2	1.2	40	19.5	46	16.8	37	14,800	43	7
N.A.		0.0	77	0.0	76	(2.2)§	77	N.A.	–	–		–		–		53,000	12	8
2,767.3	19	1.6	59	5.8	29	16.8	33	1.19	22.7	17.8	11	65.5	13	34.0	5	18,715	37	9
3,017.7	18	3.1	41	2.9	53	9.7	62	3.05	(13.1)	(2.2)	47	45.7	25	18.5	32	43,891	15	10
8,599.7	5	8.6	16	8.8	15	28.0	10	2.09	69.9	43.2	1	94.5	4	39.9	1	19,198	35	11
3,331.6	16	1.7	57	5.0	31	15.1	38	1.35	90.1	(3.9)	49	58.0	16	5.6	61	20,059	30	12
5,466.8	10	24.7	2	20.7	1	39.4§	3	12.21	280.4	20.8	6	26.0	37	24.7	14	11,800	49	13
4,611.0	11	2.4	48	3.2	49	6.4	68	1.27	42.7	(8.9)	55	57.2	17	4.1	63	65,500	9	14
N.A.		8.0	17	11.1	13	24.7	13	N.A.	–	–		–		–		57,000	10	15
1,508.3	34	0.9	69	0.8	70	3.1	72	0.50‡	(79.2)	(7.6)	51	(19.7)	74	13.9	47	42,210	18	16
9,847.5	4	9.6	13	7.6	18	14.8	42	27.25	22.1	19.3	9	55.8	19	28.0	9	19,860	32	17
594.7	53	0.9	70	4.5	38	18.8	27	1.82	15.2	7.8	30	29.6	34	22.5	19	14,319	45	18
15,161.9	3	15.1	5	10.6	14	23.1	14	5.10	34.2	19.2	10	71.1	9	27.6	11	47,000	13	19
16,302.4	2	12.6	7	8.8	16	20.5	20	1.22	38.6	25.2	2	71.0	10	36.1	3	42,640	17	20
8,448.1	6	13.4	6	11.3	10	26.8	11	3.14	17.6	14.7	19	(10.9)	68	19.1	29	71,500	7	21
N.A.		1.9	56	1.2	68	14.6	43	N.A.	–	–		–		–		68,000	8	22
N.A.		0.9	68	2.1	63	203.1	1	N.A.	–	–		–		–		125,000	3	23
3,918.1	14	6.2	22	6.9	23	19.3	25	2.56	11.3	20.1	7	78.6	7	24.0	15	55,100	11	24
1,231.6	37	4.1	34	11.5	8	28.7§	7	3.94	69.1	12.1	23	26.9	36	20.1	27	17,700	39	25
823.6	45	1.2	68	4.8	33	12.2	53	1.85	22.4	17.4	12	34.7	32	25.1	13	3,738	72	26
N.A.		–		–		–		N.A.	–	–		47.5	21	7.5	59	25,000	27	27
2,665.6	20	3.9	37	3.7	44	13.0	49	1.93	(3.0)	15.3	16	84.1	6	20.6	25	77,000	5	28
1,219.2	38	3.0	42	2.1	62	10.0§	61	2.75	1.9	(0.2)	44	11.2	52	14.4	46	36,600	24	29
68.2	73	0.1	76	0.3	74	5.4	69	0.54	(34.1)	(8.1)	54	(13.0)	70	13.3	50	3,300	75	30
4,073.5	13	5.5	23	4.6	37	10.3	59	2.62	15.9	0.3	42	38.9	28	15.5	39	17,000	40	31
337.3	59	(0.5)	82	(0.9)	79	(3.1)§	78	(0.98)**	–	–		(17.3)	72	(3.2)	66	5,875	62	32
3,049.3	17	6.3	12	15.4	5	20.5	21	2.58	9.8	10.0	27	22.0	41	18.8	31	16,274	41	33
N.A.		–		–		–		N.A.	–	–		–		–		4,191	69	34
1,572.4	33	2.5	47	2.3	61	8.4	65	0.99	–	(7.9)	53	46.0	24	9.4	57	10,417	52	35
4,127.1	12	10.0	11	6.4	27	11.9§	54	11.51	(74.3)	4.8	34	12.8	50	17.9	34	6,700	58	36
N.A.		–		–		–		N.A.	–	–		–		–		1,970	87	37
344.6	58	(0.5)	81	(0.4)	77	(1.8)	76	(0.18)	(112.8)	–		(53.5)	78	(0.8)	65	43,700	16	38
2,081.2	28	3.5	40	4.2	40	11.4	56	1.60	(22.0)	3.8	36	23.0	39	13.8	48	45,000	14	39
5,510.7	9	10.3	10	8.7	17	21.1	18	1.74	15.2	20.9	5	44.0	26	34.4	4	25,500	26	40
N.A.		(0.3)	79	(1.4)	81	(3.9)	80	(1.03)	–	–		N.A.		–		1,300	92	41
N.A.		–		–		–		N.A.	–	–		–		–		5,730	63	42
N.A.		(0.5)	83	(1.6)	82	(76.6)	85	N.A.	–	–		–		–		2,381	84	43
N.A.		3.9	36	3.9	42	14.1	47	N.A.	–	–		–		–		75,300	6	44
N.A.		4.8	28	3.0	52	15.6	36	N.A.	–	–		–		–		18,000	38	45
216.1	67	0.6	73	3.5	48	8.4	64	1.21	(27.5)	2.4	38	3.5	58	–		11,769	50	46
568.7	56	1.5	61	4.4	39	12.8	50	2.81	–	(0.7)	46	22.6	40	14.6	45	12,560	47	47
236.5	63	(4.9)	86	(6.4)	87	(23.7)	84	(1.96)	–	–		(4.0)	64	4.4	62	96,000	4	48
977.7	43	1.4	62	0.7	71	3.2§	71	0.47	6.8	–		19.7	45	15.1	42	8,200	55	49
309.3	60	0.8	71	0.6	73	2.9	73	0.35‡	(68.8)	(14.8)	57	(30.7)	77	(7.3)	67	27,000	25	50

the list must have derived 50% or more of their revenues from nonmanufacturing and nonmining businesses. Excluded but eligible for the lists that follow are companies deriving more than 50% of revenues solely from banking, life insurance, finance, savings, retail, transportation, or utilities.

† Figures are for fiscal year ended February 28, 1989.
‡ Company was No. 27 on 1988 Utilities list.
§ Company was No. 14 on 1988 Retailing list.
‖ Figures are for fiscal year ended March 31, 1989.
Figures are for fiscal year ended June 30, 1989.
** Company was No. 36 on 1988 Utilities list.
†† Figures are for fiscal year ended October 31, 1989.
‡‡ Name changed from Gulf + Western.
§§ Wholly owned by General Motors (No. 1 on FORTUNE 500 Industrial list).

THE SERVICE 500

THE 100 LARGEST DIVERSIFIED SERVICE COMPANIES

RANK BY SALES 1989	1988		(Major industry)	SALES[1] $ Millions	% change from 1988	PROFITS $ Millions	Rank	% change from 1988	ASSETS $ Millions	Rank	STOCKHOLDER EQUITY $ Millions	Rank
51	•	**BURLINGTON RESOURCES** Seattle[20]	(Natural gas)	1,921.9	(11.3)	458.1	8	535.6	6,098.1	13	3,222.6	4
52	45	**AVNET** Great Neck, N.Y.[6]	(Wholesale)	1,918.7	5.6	54.0	49	3.4	1,126.0	62	735.4	34
53	58	**CENTEX** Dallas[5]	(Homebuilder)	1,845.5	26.4	40.0	58	(46.0)	1,096.2	64	384.2	57
54	46	**REEBOK INTERNATIONAL** Stoughton, Mass.	(Wholesale)	1,835.0	2.7	175.0	21	27.7	1,166.4	61	844.3	27
55	•	**JWP** Purchase, N.Y.	(Technical serv.)	1,741.7	88.3	38.8	59	39.6	1,102.8	63	247.7	66
56	51	**PHH** Hunt Valley, Md.[11]	(Vehicle mgt.)	1,735.0	7.2	51.6	52	18.0	4,230.9	20	349.0	60
57	56	**W.W. GRAINGER** Skokie, Ill.	(Wholesale)	1,731.8	12.8	119.6	29	9.9	1,065.2	65	731.7	35
58	48	**SUBARU OF AMERICA** Cherry Hill, N.J.[6]	(Wholesale)	1,729.0	3.3	(42.4)	85	—	728.1	72	187.6	72
59	73	**NIKE** Beaverton, Oreg.[7]	(Wholesale)	1,718.5	42.8	167.0	23	64.3	825.4	70	561.8	48
60	54	**SUPER FOOD SERVICES** Dayton[11]	(Wholesale)	1,691.6	7.5	15.9	72	9.6	248.1	93	106.2	82
61	62	**COMDISCO** Rosemont, Ill.[11]	(Computer leases)	1,678.0	26.5	108.0	34	535.3	4,045.0	25	548.0	49
62	55	**AUTOMATIC DATA PROC.** Roseland, N.J.[6]	(Computing)	1,677.7	8.3	187.6	19	10.1	1,679.3	52	949.5	24
63	82	**COLUMBIA PICTURES ENTERTAINMENT** New York[2,21]	(Movies)	1,631.9	47.4	21.7**	68	—	3,564.9	31	1,060.7	22
64	57	**SERVICEMASTER** Downers Grove, Ill.	(Mgt. services)	1,618.2	5.7	68.0	45	5.3	593.7	77	39.1	92
65	52	**HOLIDAY** Memphis	(Casinos)	1,600.0[13]	0.2	90.0[13]	38	2.8	N.A.		N.A.	
66	64	**CHARTER MEDICAL** Macon, Ga.	(Hospitals)	1,566.3	21.8	(36.7)	84	—	1,344.8	57	(729.3)	97
67	65	**BINDLEY WESTERN** Indianapolis	(Wholesale)	1,566.1	22.8	2.6‡	77	(26.5)	272.3	92	48.5	90
68	60	**ACE HARDWARE** Oak Brook, Ill.	(Wholesale)	1,546.6	11.9	N.A.[18]		—	496.8	80	139.5	80
69	70	**WHEELABRATOR TECHNOLOGIES** Hampton, N.H.[11]	(Waste)	1,519.1	25.0	58.5	47	139.6	2,249.7	42	577.5	46
70	61	**CBI INDUSTRIES** Oak Brook, Ill.	(Construction)	1,495.5	8.7	34.3	61	24.6	1,358.7	56	384.1	58
71	68	**VIACOM** New York	(Pay TV)	1,436.2	14.1	131.1	28	—	3,753.0	28	455.9	51
72	66	**RYLAND GROUP** Columbia, Md.	(Homebuilder)	1,402.1	10.2	58.0	48	42.6	4,211.8	21	206.9	69
73	67	**KELLY SERVICES** Troy, Mich.	(Temp. help)	1,377.5	8.5	70.8	43	17.4	394.3	85	283.7	64
74	84	**OGDEN** New York	(Maint. serv.)	1,368.8	25.8	67.0	46	15.9	2,598.0	37	441.3	52
75	•	**FARMERS UNION** Inver Grove Hgts., Minn.[14]	(Wholesale)	1,365.2	8.4	N.A.[18]		—	656.2	76	311.5	62
76	59	**BLOUNT** Montgomery, Ala.	(Construction)	1,352.2[4]	9.9	47.4	54	498.1	664.5	75	142.6	79
77	87	**BALFOUR MACLAINE** New York	(Wholesale)	1,312.1	25.9	(4.5)	79	—	369.5	89	26.1	93
78	79	**COMMERCIAL METALS** Dallas	(Wholesale)	1,308.8	15.9	28.5	66	16.4	419.2	83	190.9	71
79	76	**COMPUTER SCIENCES** El Segundo, Calif.	(Software)	1,308.7	13.6	52.5	51	20.6	714.6	74	388.6	56
80	81	**UNIVAR** Seattle	(Wholesale)	1,307.9	17.1	20.0	70	78.9	431.4	82	114.7	81
81	71	**ECOLAB** St. Paul	(Wholesale)	1,305.6	7.7	3.1‡	75	(92.9)	1,042.9	66	405.6	54
82	78	**RYKOFF-SEXTON** Los Angeles[11]	(Wholesale)	1,295.9	13.4	20.6	69	26.0	398.0	84	178.6	73
83	63	**NVR L.P.** McLean, Va.	(Homebuilder)	1,294.4	(2.0)	30.2	64	(10.0)	2,378.6	38	167.8	76
84	86	**FOSTER WHEELER** Clinton, N.J.	(Eng. & constr.)	1,292.7	22.7	33.6	62	17.9	1,181.1	59	467.1	50
85	75	**INTERPUBLIC GROUP OF COS.** New York	(Advertising)	1,256.9	9.0	70.6	44	17.4	1,740.7	51	367.6	60
86	•	**RICHFOOD HOLDINGS** Richmond[11]	(Wholesale)	1,246.1	24.0	(1.4)	78	—	237.8	94	42.3	91
87	59	**UNION EQUITY CO-OP. EXCHANGE** Enid, Okla.	(Wholesale)	1,245.8	(14.6)	N.A.[18]		—	220.3	95	74.2	86
88	•	**UNITED ARTISTS ENTERTAIN.** Denver	(Movie theaters)	1,199.0	42.4	(103.5)	87	(4,621.6)	4,077.3	24	755.9	30
89	83	**INDIANA FARM BUREAU CO-OP.** Indianapolis[11]	(Wholesale)	1,153.7	4.6	N.A.[18]		—	191.0	97	95.5	84
90	74	**PHM** Bloomfield Hills, Mich.	(Homebuilder)	1,129.9	(4.2)	53.8	50	69.1	4,325.4	18	305.6	63
91	77	**DI GIORGIO** San Francisco	(Wholesale)	1,100.0[13]	(4.0)	N.A.		—	N.A.		N.A.	
92	85	**SERVISTAR** Butler, Pa.[6]	(Wholesale)	1,082.6	1.0	N.A.[18]		—	300.0	90	79.5	85
93	•	**TURNER BROADCASTING** Atlanta	(Broadcasting)	1,065.1	—	(70.6)‡	86	—	2,114.8	45	(431.6)	96
94	•	**COMPUTER ASSOCIATES** Garden City, N.Y.[3]	(Software)	1,030.2	45.3	163.5	24	60.6	1,167.2	60	747.7	32
95	92	**HARDWARE WHOLESALERS** Fort Wayne[6]	(Wholesale)	1,025.1	8.8	N.A.[18]		—	272.5	91	104.7	83
96	•	**OMNICOM GROUP** New York	(Advertising)	1,019.3	25.6	46.8	55	—	1,547.6	54	238.1	67
97	91	**HILTON HOTELS** Beverly Hills	(Hotels)	998.1	4.7	110.1	30	(15.9)	2,216.0	43	883.0	25
98	•	**TWENTIETH CENTURY FOX FILM** Los Angeles[2,21]	(Movies)	997.7	24.7	311.2	11	459.8	1,943.2	47	1,359.3	17
99	100	**UNITED STATIONERS** Des Plaines, Ill.	(Wholesale)	970.2	13.3	24.7	67	6.8	381.8	86	170.9	75
100	•	**COUNTRYMARK** Delaware, Ohio[11]	(Wholesale)	962.1	19.7	N.A.[18]		—	204.6	96	65.2	87
		TOTALS		329,087.7		14,111.6			287,415.8		83,728.7	

Figures are for fiscal year ended September 30, 1989
Figures are for fiscal year ended August 31, 1989
FORTUNE estimate
Company was No. 131 on 1988 FORTUNE 500 Industrials
Acquired by Asea Brown Boveri (No. 29 on 1988 International 500 list), January 30, 1990
Figures are for fiscal year ended May 31, 1989
Name changed from Greyhound
Cooperatives provide only net margin figures, which are not comparable with the profit figures on this list
Company was No. 142 on 1988 FORTUNE 500 Industrials
Company was No. 194 on 1988 FORTUNE 500 Industrials

MARKET VALUE 4/20/90		NET PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
		SALES		ASSETS		STOCKHOLDERS' EQUITY			% change from	1979-89 annual growth rate			1979-89 annual average					
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1989/$	1988	%	Rank	1989 %	Rank	%	Rank	Number	Rank	
6,039.6	8	23.8	3	7.5	19	14.2	46	3.06	565.2	–		50.0	20	–		5,208	65	51
1,057.6	41	2.8	44	4.8	34	7.3	66	1.51	3.4	(0.5)	45	42.5	27	12.3	54	8,500	54	52
584.2	55	2.2	54	3.7	45	10.4	58	2.64	(43.0)	4.7	35	6.7	55	6.2	60	4,700	67	53
1,921.3	30	9.5	14	15.0	6	20.7	19	1.53	27.5	–		58.5	15	–		3,034	78	54
720.7	48	2.2	52	3.5	46	15.7	35	1.90	28.4	–		71.4	8	31.7	6	16,000†	42	55
564.1	57	3.0	43	1.2	67	14.8	41	3.05	17.3	11.6	25	(1.2)	62	15.4	40	4,374	68	56
2,009.1	29	6.9	19	11.2	11	16.3	34	4.39	12.0	9.9	29	21.7	42	15.6	38	7,646	57	57
303.5	61	(2.5)	85	(5.8)	86	(22.6)	83	(0.87)	–	–		(6.5)	67	14.8	44	1,153	93	58
2,523.4	25	9.7	12	20.2	2	29.7	5	4.45	64.8	–		104.1	3	–		4,070	70	59
183.9	70	0.9	67	6.4	26	15.0§	39	2.21	9.4	16.7	14	15.1	48	28.5	8	2,100	85	60
745.0	47	6.4	20	2.7	55	19.7	23	2.57	526.8	21.9	3	19.0	47	27.9	10	1,875	88	61
3,776.1	15	11.2	8	11.2	12	19.8	22	2.53	15.0	16.4	15	28.2	35	20.5	26	21,000	29	62
N.A.		1.3	64	0.6	72	2.1	74	0.14**	–	–		N.A.		–		N.A.		63
642.7	51	4.2	32	11.5	9	174.1	2	2.10	4.0	19.7	8	2.6	59	16.9	36	18,835	36	64
N.A.		5.6	23	–		–		N.A.	–	–		165.7	2	36.6	2	40,000	21	65
N.A.		(2.3)	84	(2.7)	84	–		(6.06)	–	–		N.A.		–		19,600	33	66
61.6	74	0.2	75	1.0	69	5.4	70	0.41‡	(29.3)	–		47.4	22	–		406	99	67
N.A.		–		–		–		N.A.	–	–		–		–		2,875	79	68
1,482.6	35	3.8	38	2.6	57	10.1	60	1.50	44.2	–		25.4	38	–		9,300	53	69
672.3	49	2.3	50	2.5	59	8.9	63	1.41	62.1	(7.9)	52	30.1	33	1.8	64	12,000	48	70
2,608.3	23	9.1	15	3.5	47	28.7	6	2.13	–	11.0	26	84.7	5	20.7	24	4,900	66	71
239.4	62	4.1	33	1.4	64	28.0	9	4.30	38.7	21.4	4	(5.8)	65	23.1	18	2,700†	81	72
1,089.6	40	5.1	26	18.0	3	25.0	12	2.36	17.5	17.1	13	34.8	31	30.5	7	3,900	71	73
1,045.9	42	4.9	27	2.6	58	15.2	37	1.68	16.7	(2.6)	48	13.0	49	18.4	33	42,000†	19	74
N.A.		–		–		–		N.A.	–	–		–		–		3,171†	77	75
157.7	71	3.5	39	7.1	22	33.2§	4	3.94	497.0	14.7	18	(15.6)	71	11.0	56	6,400	59	76
47.5	76	(0.3)	80	(1.2)	80	(17.3)	82	(0.77)	–	–		(17.9)	73	15.2	41	978	94	77
231.7	66	2.2	53	6.8	24	14.9	40	2.46	16.7	5.3	32	5.8	57	15.0	43	3,386	74	78
669.2	50	4.0	35	7.3	20	13.5	48	3.28	20.1	11.9	24	21.6	43	12.0	55	19,550	34	79
236.2	64	1.5	60	4.6	36	17.4	30	2.27	78.7	5.0	33	10.7	53	22.0	21	2,702	80	80
632.6	52	0.2	74	0.3	75	0.7§	75	0.10‡	(93.9)	(21.4)	58	10.2	54	12.9	52	13,100	46	81
186.4	69	1.6	58	5.2	30	11.5	55	1.75	14.5	13.5	20	(5.9)	66	21.2	23	5,400	64	82
112.3	72	2.3	49	1.3	65	18.0	28	1.02	(18.4)	–		(3.1)	63	–		2,669	82	83
800.0	46	2.6	45	2.8	54	7.2	67	0.95	17.3	(4.0)	50	46.4	23	7.7	58	8,195	56	84
1,096.4	39	5.6	24	4.1	41	19.2	26	2.10	15.8	9.9	28	35.9	30	23.3	16	14,700	44	85
50.9	75	(0.1)	78	(0.6)	78	(3.3)	79	(0.14)	–	–		0.6	61	–		2,000	86	86
N.A.		–		–		–		N.A.	–	–		–		–		485	98	87
1,813.9	32	(8.6)	88	(2.5)	83	(15.2)§	81	(0.99)	–	–		N.A.		–		20,000	31	88
N.A.		–		–		–		N.A.	–	–		–		–		891	96	89
233.9	65	4.8	30	1.2	66	17.6	29	2.02	66.9	13.5	21	0.9	60	22.1	20	1,800	89	90
N.A.		–		–		–		N.A.	–	–		12.3	51	12.6	53	2,500	83	91
N.A.		–		–		–		N.A.	–	–		–		–		1,316	91	92
2,224.8	27	(6.6)	87	(3.3)	85	–		(2.39)‡	–	–		202.2	1	–		3,466	73	93
2,559.1	24	15.9	4	14.0	7	21.9	16	0.98	56.8	–		(21.6)	75	–		6,276	61	94
N.A.		–		–		–		N.A.	–	–		–		–		909	95	95
594.7	54	4.6	31	3.0	50	19.7	24	1.81	14.6	0.6	41	37.2	29	13.1	51	11,400	51	96
2,353.6	26	11.0	9	5.0	32	12.5	52	2.27	(16.5)	1.9	39	56.8	18	21.6	22	39,000	23	97
N.A.		31.2	1	16.0	4	22.9	15	N.A.	–	–		–		–		1,636	90	98
209.1	68	2.5	46	6.5	25	14.5	45	1.60	6.7	–		(28.4)	76	–		3,300	76	99
N.A.		–		–		–		N.A.	–	–		–		–		850	97	100
216,865.4																2,423,661		

* Figures are for fiscal year ended April 30, 1989.
** Acquired by Sony (No. 59 on 1988 International 500 list), November 6, 1989.
†† Name changed to Wheelabrator Technologies after it merged into Wheelabrator Group (No. 70 on 1988 Diversified Service list), August 24, 1989.
‡‡ Company was No. 287 on 1988 FORTUNE 500 Industrials.
§§ Wholly owned by News Corp. (No. 183 on 1988 International 500 list).

THE 100 LARGEST COMMERCIAL BANKING COMPANIES

RANK BY ASSETS 1989	1988		ASSETS[1] $ Millions	% change from 1988	DEPOSITS $ Millions	Rank	LOANS[2] $ Millions	Rank	PROFITS $ Millions	Rank	% change from 1988
1	1	**CITICORP** New York	230,643.0	11.1	137,922.0	1	155,383.0	1	498.0	4	(73.2)
2	2	**CHASE MANHATTAN CORP.** New York	107,369.0	10.2	69,073.0	3	73,402.0	2	(665.0)	95	(162.8)
3	3	**BANKAMERICA CORP.** San Francisco	98,764.0	4.3	81,186.0	2	72,488.0	3	1,103.0**	1	51.9
4	4	**J.P. MORGAN & CO.** New York	88,964.0	6.0	39,158.0	9	26,030.0	13	(1,275.0)	98	(227.3)
5	5	**SECURITY PACIFIC CORP.** Los Angeles	83,943.0	7.8	52,630.0	4	60,566.0	4	740.6	2	15.9
6	6	**CHEMICAL BANKING CORP.** New York	71,513.0	6.2	50,151.0	5	41,876.0	5	(482.2)	93	(164.0)
7	18	**NCNB CORP.** Charlotte, N.C.[3]	66,190.8	121.8	48,576.3	6	33,943.7	10	447.1	5	77.1
8	7	**MANUFACTURERS HANOVER CORP.** New York	60,479.0	(9.3)	41,994.0	8	39,145.0	7	(518.0)‡	94	(154.4)
9	8	**FIRST INTERSTATE BANCORP** Los Angeles	59,051.4	1.5	46,467.7	7	36,767.9	8	(124.5)	88	(196.2)
10	9	**BANKERS TRUST NEW YORK CORP.** New York	55,658.4	(3.9)	26,220.1	15	18,421.4	24	(979.9)	96	(251.3)
11	10	**BANK OF NEW YORK CO.** New York	48,856.5	3.1	34,927.1	11	34,629.4	9	50.7	68	(76.2)
12	11	**WELLS FARGO & CO.** San Francisco	48,736.6	4.5	36,430.3	10	40,988.3	6	601.1	3	17.3
13	12	**FIRST CHICAGO CORP.** Chicago	47,907.0	7.8	32,935.0	12	28,447.0	11	358.7	9	(30.1)
14	13	**PNC FINANCIAL CORP.** Pittsburgh	45,660.7	11.9	30,120.2	13	27,490.9	12	377.4	6	(14.7)
15	14	**BANK OF BOSTON CORP.** Boston	39,177.9	8.6	28,697.4	14	24,215.0	14	70.4	52	(78.1)
16	21	**FLEET/NORSTAR FINANCIAL GROUP** Providence	33,440.8	15.1	21,676.6	20	21,291.9	19	371.3	7	10.6
17	22	**FIRST UNION CORP.** Charlotte, N.C.	32,130.6	10.9	21,498.3	21	21,578.6	18	256.2	16	(13.7)
18	16	**MELLON BANK CORP.** Pittsburgh	31,467.0	1.0	21,344.0	22	18,788.0	22	210.0**	20	—
19	20	**SUNTRUST BANKS** Atlanta	31,043.6	6.4	24,961.5	18	20,764.5	20	337.3	10	9.3
20	19	**FIRST FIDELITY BANCORP** Newark, N.J.	30,727.8	3.2	22,872.5	19	19,631.8	21	159.5	24	370.4
21	15	**BANK OF NEW ENGLAND CORP.** Boston	29,772.7	(7.5)	25,529.6	16	22,288.2	15	(1,113.3)	97	(495.3)
22	17	**CONTINENTAL BANK CORP.** Chicago	29,549.0	(3.4)	17,176.0	33	15,314.0	30	147.3	26	(53.4)
23	25	**BARNETT BANKS** Jacksonville, Fla.	29,006.7	12.7	25,055.9	17	22,176.2	16	256.7	15	13.3
24	23	**SHAWMUT CORP.** Boston	27,885.2	(1.9)	18,765.5	25	18,462.5	23	(128.9)	89	(153.2)
25	24	**MARINE MIDLAND BANKS** Buffalo[4]	27,066.5	4.2	18,325.6	28	21,720.0	17	13.9**	83	(91.3)
26	27	**BANC ONE CORP.** Columbus, Ohio	26,552.2	5.1	20,952.2	23	17,658.3	26	362.9	8	6.7
27	30	**NBD BANCORP** Detroit	25,771.3	6.6	19,806.1	24	15,117.2	31	258.8	14	13.9
28	28	**REPUBLIC NEW YORK CORP.** New York	25,467.0	3.9	16,524.8	34	6,292.9	59	24.0	79	(85.9)
29	31	**SOVRAN FINANCIAL CORP.** Norfolk, Va.	25,442.3	13.2	18,693.5	26	16,524.8	27	269.2	11	10.7
30	33	**NORWEST CORP.** Minneapolis	24,334.7	11.9	15,206.1	36	15,560.1	28	237.0	18	12.2
31	32	**FIRST WACHOVIA CORP.** Winston-Salem, N.C.	24,049.5	10.2	17,386.6	31	15,102.0	32	269.0	12	10.1
32	36	**MIDLANTIC CORP.** Edison, N.J.	23,665.5	20.1	18,685.6	27	18,160.2	25	206.3	21	(7.5)
33	35	**CITIZENS & SOUTHERN CORP.** Atlanta	23,312.8	10.5	18,109.6	29	15,012.9	33	238.0	17	15.4
34	34	**NATIONAL CITY CORP.** Cleveland	22,971.7	6.2	17,264.3	32	14,965.1	34	263.3	13	12.9
35	37	**NATIONAL WESTMINSTER BANCORP** New York[5]	21,773.0	14.5	18,014.7	30	14,554.8	35	(139.5)	91	(207.4)
36	29	**FIRST BANK SYSTEM** Minneapolis	20,820.2	(14.1)	15,753.1	35	15,314.0	29	2.4	85	—
37	39	**MNC FINANCIAL** Baltimore	20,316.3	12.8	12,575.1	38	13,989.5	36	212.6	19	16.6
38	45	**U.S. BANCORP** Portland, Ore.	16,975.4	18.0	11,432.2	42	11,409.5	38	150.8	25	21.7
39	40	**CORESTATES FINANCIAL CORP.** Philadelphia	16,848.6	2.5	11,440.6	41	11,911.9	37	198.7	22	10.7
40	41	**SOUTHEAST BANKING CORP.** Miami	16,525.3	5.8	12,759.8	37	10,743.8	40	80.5	47	6.8
41	44	**KEYCORP** Albany, N.Y.	15,461.4	5.6	12,453.0	39	9,805.2	41	136.9	28	14.2
42	42	**UNION BANK** San Francisco[6]	15,375.6	2.4	11,637.1	40	11,192.1	39	138.9	27	130.7
43	43	**BOATMEN'S BANCSHARES** St. Louis	14,542.4	(.9)	10,851.3	44	8,811.5	42	129.2	29	85.2
44	46	**FIRST CITY BANCORP. OF TEXAS** Houston	14,081.0	15.5	10,818.7	45	8,076.9	46	112.2	35	—
45	58	**FIRST OF AMERICA BANK CORP.** Kalamazoo, Mich.	12,792.7	30.9	11,366.4	43	8,241.0	43	122.9	31	38.3
46	51	**SIGNET BANKING CORP.** Richmond	12,476.1	13.4	7,595.1	60	7,121.3	51	123.3	30	(19.1)
47	49	**HARRIS BANKCORP** Chicago	12,374.4	9.7	8,960.3	52	6,784.4	55	52.3	67	(42.0)
48	52	**UJB FINANCIAL** Princeton, N.J.	12,172.3	11.8	9,336.0	49	8,212.7	44	118.5	32	2.1
49	50	**COMERICA** Detroit	12,149.5	9.0	9,882.7	46	7,748.6	49	77.6	49	(30.7)
50	59	**MERIDIAN BANCORP** Reading, Pa.	11,925.1	25.2	9,601.8	47	7,842.7	48	91.5	43	6.3

N.A. Not available
• Not on last year's list
** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 332

† Average for the year; see the reference to "employees" on page 332
‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" on page 332

§ Dividends paid on mandatory redeemable preferred stock subtracted from profits.
[1] As of December 31, 1989. All companies on the list must have more than 80% of their assets in chartered commercial banking institutions.

STOCKHOLDERS' EQUITY		MARKET VALUE 4/20/90		PROFITS AS PERCENT OF ASSETS		PROFITS AS PERCENT OF STOCKHOLDERS' EQUITY		EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
$ Millions	Rank	$ Millions	Rank	%	Rank	%	Rank	1989/$	% change from 1988	1979-89 annual growth rate %	Rank	1989 %	Rank	1979-89 annual average %	Rank	Number	Rank	
10,076.0	1	7,590.9	1	0.2	78	4.9§	77	1.16	(78.4)	(6.1)	68	17.7	49	15.9	68	92,000	1	1
4,944.0	3	3,042.9	9	(0.6)	89	(13.5)	91	(7.94)	(168.7)	–		29.8	24	13.6	74	41,610	3	2
5,534.0	2	5,796.6	3	1.1	13	19.9	4	5.19**	36.9	2.4	64	55.3	7	4.2	86	54,779	2	3
4,495.0	5	6,178.2	2	(1.4)	94	(28.4)	93	(7.04)	(230.9)	–		31.7	19	20.0	46	14,207	25	4
4,637.0	4	4,212.2	4	0.9	51	16.0	19	6.26	12.0	9.7	32	18.3	48	19.3	50	41,099	4	5
3,705.0	6	2,720.1	11	(0.7)	91	(13.0)	90	(8.29)	(169.0)	–		3.9	71	14.7	72	29,139	6	6
2,961.5	8	3,758.0	6	0.7	62	15.1	27	4.62	59.3	13.8	9	74.0	1	26.3	7	27,002	7	7
3,381.0	7	2,237.9	14	(0.9)	92	(15.3)	92	(10.21)‡	(155.9)	–		27.7	28	9.9	81	20,034	8	8
2,339.3	14	2,159.0	16	(0.2)	87	(5.3)	87	(3.30)	(225.5)	–		2.2	72	8.9	82	36,000†	5	9
2,385.7	13	2,884.8	10	(1.8)	96	(41.1)	96	(12.10)	(249.6)	–		23.8	37	21.3	39	13,230	29	10
2,764.3	11	2,138.7	17	0.1	81	1.8	81	0.24	(95.7)	(20.4)	73	13.7	53	20.0	45	14,883	23	11
2,860.9	9	3,511.4	7	1.2	5	21.0	2	11.02	19.8	15.0	4	28.2	26	24.9	12	19,500	10	12
2,692.0	12	2,007.5	21	0.7	57	13.3	52	5.10	(37.8)	6.1	52	31.0	20	15.7	69	18,158	13	13
2,829.6	10	3,140.4	8	0.8	53	13.3	51	3.98	(21.8)	8.1	43	9.7	59	20.7	44	17,681	17	14
2,096.6	17	810.3	41	0.2	80	3.4	79	0.80	(82.8)	(6.2)	69	(15.4)	86	17.9	60	18,800	11	15
2,288.7	15	2,177.7	15	1.1	14	16.2	15	3.34	8.8	13.0	14	7.4	65	25.9	8	18,789	12	16
2,076.1	19	1,875.4	23	0.8	54	12.3	58	2.40	(13.0)	7.8	45	(2.7)	76	20.8	42	17,733	16	17
1,549.0	27	930.4	38	0.7	63	12.9§	54	4.01**	–	(2.0)	67	19.6	45	6.3	85	15,300	21	18
2,088.9	18	2,624.4	13	1.1	15	16.1	17	2.61	9.7	11.0	23	19.0	46	18.3	57	20,023	9	19
1,565.0	26	1,078.8	33	0.5	70	10.2	67	2.51	765.5	20.0	2	(7.5)	81	21.2	41	13,500	27	20
457.7	73	251.6	84	(3.7)	98	(243.2)	98	(16.11)	(496.8)	–		(54.5)	89	11.1	78	16,821	18	21
1,680.0	23	720.5	44	0.5	71	8.8	70	2.06	(60.3)	(20.3)	72	(0.5)	73	(12.5)	88	7,560	43	22
1,690.7	22	1,893.0	22	0.9	50	15.2§	25	4.07	8.5	14.1	8	9.6	60	24.4	14	18,109	14	23
1,397.7	31	978.2	37	(0.5)	88	(9.2)	89	(1.77)	(154.0)	–		(8.9)	83	19.0	53	12,019	32	24
1,178.5	36	N.A.		0.1	84	1.2	83	N.A.	–	–		–		–		13,345	28	25
2,255.2	16	3,996.3	5	1.4	3	16.1	18	2.52	6.2	12.3	17	50.8	9	25.2	11	17,800	15	26
1,673.8	24	2,114.0	18	1.0	29	15.5	23	3.59	12.0	10.0	31	32.9	18	23.6	21	12,367†	30	27
1,372.0	32	1,367.5	28	0.1	82	1.7	82	0.04	(99.2)	(31.9)	74	23.1	39	23.7	20	3,700	81	28
1,612.2	25	1,829.0	24	1.1	16	16.7	9	4.49	9.8	8.2	40	15.8	50	21.6	38	14,686	24	29
1,277.8	34	1,753.1	25	1.0	33	18.5	6	2.52	11.5	6.2	51	45.4	11	16.6	65	16,148	19	30
1,739.9	20	2,672.0	12	1.1	12	15.5	24	3.87	7.0	13.1	13	34.2	17	22.9	28	13,725	26	31
1,517.2	28	581.0	58	0.9	52	13.6	49	5.37	(8.2)	7.5	47	(13.9)	84	18.4	56	12,182	31	32
1,429.4	30	1,419.7	26	1.0	23	16.7	10	3.67	12.9	14.8	5	29.9	23	22.8	29	15,381	20	33
1,507.2	29	2,076.9	19	1.1	9	17.5	7	4.35	13.3	9.1	35	24.8	35	18.8	54	15,160	22	34
1,713.3	21	N.A.		(0.6)	90	(8.1)	88	N.A.	–	–		–		–		8,136	41	35
1,057.0	38	840.2	40	0.0	85	0.2	85	(0.27)	–	–		(15.3)	85	11.9	77	10,667†	33	36
1,288.7	33	1,382.9	27	1.0	18	16.5	12	3.45	9.9	14.7	6	4.6	70	23.8	19	9,300	37	37
1,053.7	39	1,352.1	29	0.9	48	14.3	41	3.05	21.2	7.5	46	69.0	3	17.2	62	9,721	36	38
1,245.9	35	2,031.1	20	1.2	7	15.9	20	5.03	11.8	11.5	21	9.3	62	26.5	6	8,541	38	39
834.5	45	441.8	67	0.5	72	9.6	69	2.42	3.0	2.7	63	(8.9)	82	12.4	76	8,514	39	40
984.0	40	1,056.2	34	0.9	49	13.9	44	3.20	10.3	9.0	36	39.5	14	24.2	15	10,372	34	41
929.0	42	713.8	45	0.9	46	15.0	32	4.10	16.8	3.1	62	(4.3)	79	10.9	79	7,376	44	42
1,085.9	37	1,018.4	36	0.9	47	11.9§	59	3.72	85.1	4.7	58	9.4	61	18.0	59	8,402	40	43
755.0	46	576.1	60	0.8	55	14.9	34	4.66	–	–		47.5	10	–		6,904	47	44
947.9	41	805.8	42	1.0	35	13.0	53	5.88	(4.5)	8.7	39	12.8	55	22.3	32	9,777	35	45
750.7	47	638.0	54	1.0	30	16.4	13	4.55	(20.3)	12.0	18	12.7	56	23.1	26	6,592	50	46
725.3	51	N.A.		0.4	74	7.2	73	7.84	(42.0)	5.4	56	N.A.		–		5,356	63	47
852.8	43	650.1	51	1.0	34	13.9	45	2.62	1.6	9.4	33	(4.7)	80	22.0	34	6,364	51	48
704.8	55	708.3	46	0.6	64	11.0	65	4.65	(31.4)	4.9	57	10.1	57	19.3	51	7,161	46	49
713.4	54	650.5	50	0.8	56	12.8	55	2.32	5.0	4.1	61	4.7	69	14.0	73	6,694	49	50

§ Net of unearned discount and loan-loss reserves. Figure includes lease financing.

‡ Figures reflect acquisition of NCNB Texas National Bank (No. 26 on last year's list), August 9, 1989.

* A wholly owned subsidiary of Hongkong & Shanghai Banking Corp. (No. 31 among last year's largest International Banks).

** Wholly owned by National Westminster Bank (No. 19 among last year's largest International Banks).

* Company's common stock is 76.5% owned by Bank of Tokyo (No. 15 among last year's largest International Banks).

† Name changed from United Jersey Banks.

THE 100 LARGEST COMMERCIAL BANKING COMPANIES

RANK BY ASSETS 1989	1988		ASSETS[1] $ Millions	ASSETS % change from 1988	DEPOSITS $ Millions	DEPOSITS Rank	LOANS[2] $ Millions	LOANS Rank	PROFITS $ Millions	PROFITS Rank	PROFITS % change from 1988
51	60	**HUNTINGTON BANCSHARES** Columbus, Ohio	11,679.8	22.9	8,589.6	55	7,032.0	52	108.0	38	23.3
52	54	**FIRST AMERICAN BANKSHARES** Washington	11,489.7	8.0	8,988.4	51	6,780.5	56	66.7	54	(16.9)
53	48	**MICHIGAN NATIONAL CORP.** Farmington Hills	11,480.0	1.5	9,295.1	50	6,671.3	58	187.3	23	101.0
54	55	**CRESTAR FINANCIAL CORP.** Richmond	11,360.8	9.2	8,467.3	56	7,676.1	50	103.8	41	19.8
55	53	**AMERITRUST CORP.** Cleveland	11,233.1	4.6	8,790.8	53	8,093.9	45	115.9	33	12.0
56	57	**NORTHERN TRUST CORP.** Chicago	10,937.7	10.4	7,038.3	61	5,510.0	63	113.2	34	3.6
57	56	**SOCIETY CORP.** Cleveland	10,903.3	8.9	8,424.5	57	6,719.9	57	110.0	36	10.0
58	47	**VALLEY NATIONAL CORP.** Phoenix	10,519.5	(10.6)	9,369.1	48	6,997.5	53	(149.2)	92	(321.7)
59	62	**MANUFACTURERS NATIONAL CORP.** Detroit	10,304.5	10.7	8,365.2	58	6,107.7	61	107.3	39	11.5
60	63	**DOMINION BANKSHARES** Roanoke, Va.	10,119.7	9.9	7,624.3	59	6,861.2	54	94.1	42	13.3
61	64	**STATE STREET BOSTON CORP.** Boston	9,983.0	19.2	6,178.0	66	2,414.7	99	104.0	40	12.7
62	61	**BAYBANKS** Boston	9,913.3	4.4	8,784.3	54	7,928.2	47	63.1	56	(28.7)
63	67	**FIRSTAR CORP.** Milwaukee	8,607.9	9.8	6,835.3	63	5,253.7	64	87.2	44	(34.1)
64	65	**AMSOUTH BANCORP.** Birmingham, Ala.	8,565.4	3.0	6,672.4	65	5,536.9	62	63.2	55	(20.8)
65	75	**BANCORP HAWAII** Honolulu	8,317.1	25.4	7,024.3	62	4,806.3	68	79.9	48	6.6
66	71	**BANK OF TOKYO TRUST** New York[4]	8,239.4	18.6	5,815.0	72	3,835.2	82	24.8	78	(33.3)
67	66	**OLD KENT FINANCIAL CORP.** Grand Rapids	8,127.2	3.5	6,780.2	64	5,005.2	66	85.4	46	10.7
68	68	**FLORIDA NAT'L BANKS OF FLA.** Jacksonville	7,882.7	.7	6,071.7	67	4,079.9	78	(131.9)	90	(477.7)
69	72	**BANK OF CALIFORNIA** San Francisco[5]	7,876.4	14.4	5,291.1	78	6,211.1	60	46.6**	70	83.1
70	74	**SOUTHTRUST CORP.** Birmingham, Ala.	7,763.2	16.8	6,054.5	68	4,630.8	72	72.8	51	7.7
71	70	**RIGGS NATIONAL CORP.** Washington	7,337.2	4.8	5,976.9	69	3,768.9	83	39.4	75	6.5
72	79	**FIRST MARYLAND BANCORP** Baltimore	7,186.9	14.5	4,944.2	82	4,965.2	67	73.4	50	40.1
73	73	**MARSHALL & ILSLEY CORP.** Milwaukee	7,150.8	5.5	5,585.3	75	4,567.7	73	85.4	45	12.1
74	90	**FIFTH THIRD BANCORP** Cincinnati	7,143.0	36.2	5,783.5	74	5,083.9	65	108.3	37	28.7
75	69	**FIRST AMERICAN CORP.** Nashville	7,058.3	(2.0)	5,824.6	71	4,520.8	75	4.2	84	(86.1)
76	76	**MERCANTILE BANCORP.** St. Louis	6,942.2	7.5	5,447.8	77	4,741.8	69	.5	86	(98.2)
77	77	**SANWA BANK CALIFORNIA** Los Angeles[10]	6,918.3	7.6	5,564.2	76	4,647.9	71	14.3	82	(54.9)
78	•	**INTEGRA FINANCIAL** Pittsburgh	6,767.6	(2.3)	5,803.8	73	3,951.3	80	35.6	76	(46.3)
79	83	**HIBERNIA CORP.** New Orleans	6,698.9	14.8	5,869.8	70	4,679.2	70	61.6	58	16.3
80	78	**FIRST PENNSYLVANIA CORP.** Philadelphia	6,604.9	3.1	4,633.9	88	4,543.0	74	N.A.		—
81	80	**FIRST TENNESSEE NATIONAL CORP.** Memphis	6,397.5	7.1	4,949.4	81	3,599.8	86	28.8	77	(45.0)
82	87	**SOUTH CAROLINA NATIONAL CORP.** Columbia	6,215.6	9.9	4,667.5	86	4,149.9	77	59.2	60	8.5
83	84	**UNITED BANKS OF COLORADO** Denver	6,080.4	4.6	4,754.3	84	3,148.0	96	18.1	80	100.6
84	82	**INB FINANCIAL CORPORATION** Indianapolis[12]	6,014.7	1.5	4,571.0	90	3,837.8	81	59.1	61	5.9
85	85	**BANCO POPULAR DE PUERTO RICO** San Juan	5,972.7	5.5	4,926.3	83	3,278.5	91	56.3	65	19
86	86	**STAR BANC CORPORATION** Cincinnati[13]	5,949.4	5.2	4,973.1	80	4,210.3	76	58.0	63	(0.8)
87	88	**COMMERCE BANCSHARES** Kansas City, Mo.	5,829.1	7.1	4,987.9	79	3,193.3	94	59.0	62	20.3
88	94	**FIRST SECURITY CORP.** Salt Lake City	5,794.8	12.3	4,149.1	94	3,989.4	79	43.1	72	30.6
89	92	**MERCHANTS NATIONAL CORP.** Indianapolis	5,576.6	6.7	4,122.4	96	3,457.0	89	41.4	73	(6.0)
90	99	**INDUSTRIAL BANK OF JAPAN TRUST CO.** New York[4]	5,575.0	17.4	3,199.1	100	2,339.5	100	15.9	81	3.6
91	95	**FIRST FLORIDA BANKS** Tampa	5,564.6	8.4	4,637.0	87	3,647.3	85	39.5	74	(19.3)
92	93	**FIRST ALABAMA BANCSHARES** Montgomery, Ala.	5,549.6	7.3	4,744.4	85	3,649.3	84	62.6	57	7.6
93	91	**EQUITABLE BANCORP** Baltimore	5,340.3[11]	1.8	3,517.3[11]	99	3,046.3[11]	97	N.A.		—
94	100	**CENTRAL FIDELITY BANKS** Richmond	5,335.2	12.8	4,142.3	95	3,493.8	88	54.4	66	9.9
95	81	**TRUSTCORP** Toledo	5,327.3	(10.4)	4,548.0	91	3,581.7	87	(104.1)	87	(8,401.1)
96	89	**EUROPEAN AMERICAN BANCORP** New York	5,293.3	(.8)	4,607.6	89	3,235.1	93	61.3	59	(37.0)
97	97	**BANK SOUTH CORP.** Atlanta	5,136.2	5.2	3,723.4	98	3,276.0	92	48.1	69	10.8
98	98	**FIRST VIRGINIA BANKS** Falls Church	5,124.0	6.8	4,426.7	93	3,294.8	90	67.4	53	10.6
99	•	**FIRST HAWAIIAN** Honolulu	5,080.1	19.9	4,512.3	92	2,772.6	98	57.4	64	32.5
100	•	**BB&T FINANCIAL CORP.** Wilson, N.C.	4,807.8	9.9	3,899.4	97	3,158.2	95	44.2	71	14.3
		TOTALS	2,300,256.5		1,614,752.1		1,443,943.3		6,994.8		

[4] Wholly owned by Bank of Tokyo (No. 15 among last year's largest International Banks).

[5] Company is 83% owned by Ban-Cal Tri State (No. 72 on last year's Commercial Bank list) and 17% owned by Mitsubishi Bank.

[10] Wholly owned by Sanwa Bank (No. 5 among last year's largest International Banks).

[11] Figures as of September 30, 1989.

STOCKHOLDERS' EQUITY		MARKET VALUE 4/20/90		PROFITS AS PERCENT OF ASSETS		PROFITS AS PERCENT OF STOCKHOLDERS' EQUITY		EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
$ Millions	Rank	$ Millions	Rank	%	Rank	%	Rank	1989/$	% change from 1988	1979-89 annual growth rate %	Rank	1989 %	Rank	1979-89 annual average %	Rank	Number	Rank	
720.7	52	870.7	39	0.9	42	15.0	31	2.11	4.1	8.7	38	38.6	15	23.1	25	5,885	57	51
844.3	44	N.A.		0.6	67	7.9	71	N.A.	—	—		—		—		6,101	53	52
734.5	50	577.2	59	1.6	1	25.5	1	12.13	99.8	12.0	19	15.0	51	16.9	63	6,000	55	53
750.3	48	783.0	43	0.9	45	13.8	46	3.28	10.8	10.4	27	25.0	34	21.9	35	6,029	54	54
717.6	53	658.3	48	1.0	22	16.2	16	3.11	18.7	7.2	48	25.7	33	19.1	52	6,105	52	55
591.2	61	1,106.6	32	1.0	21	19.1	5	6.23	(5.7)	13.0	15	42.1	13	24.1	18	5,632	60	56
746.2	49	1,037.7	35	1.0	28	14.7	37	4.63	10.5	8.8	37	7.2	66	19.9	47	5,935	56	57
446.7	76	271.7	83	(1.4)	93	(33.4)	94	(7.55)	(321.4)	—		(45.4)	88	(0.4)	87	7,354	45	58
654.5	57	679.4	47	1.0	20	16.4	14	7.06	10.3	8.1	42	21.6	42	22.2	33	5,784	58	59
625.0	58	575.6	61	0.9	41	15.1	28	2.45	14.5	6.9	49	22.5	40	15.5	70	5,599	61	60
597.2	60	1,310.5	30	1.0	19	17.4	8	2.84	13.1	21.0	1	50.9	8	42.4	1	7,624	42	61
572.9	63	214.8	86	0.6	65	11.0	64	3.95	(29.1)	7.9	44	(24.6)	87	20.7	43	5,748	59	62
580.1	62	650.0	52	1.0	26	15.0	29	3.73	(37.0)	10.9	25	27.8	27	24.2	16	6,733	48	63
560.7	65	521.5	64	0.7	60	11.3	61	2.60	(21.2)	5.5	55	10.1	58	16.5	66	4,822	65	64
482.7	71	646.2	53	1.0	36	16.5	11	5.41	3.0	11.1	22	44.0	12	22.9	27	3,769	80	65
400.4	85	N.A.		0.3	75	6.2	75	N.A.	—	—		—		—		368	99	66
600.1	59	636.5	55	1.1	17	14.2	42	3.23	9.5	10.6	26	24.4	36	21.7	37	4,525	66	67
327.5	95	N.A.		(1.7)	95	(40.3)	95	(4.95)	(477.9)	—		61.8	6	23.4	22	4,294	69	68
418.6	81	N.A.		0.6	66	11.1	63	N.A.	—	—		—		—		3,676	83	69
507.1	68	515.2	66	0.9	39	14.4	40	2.73	6.3	12.3	16	19.6	44	23.2	24	4,403	68	70
342.3	94	230.8	85	0.5	68	11.5	60	2.86	12.6	4.7	59	(3.1)	77	14.9	71	2,397	97	71
489.3	70	N.A.		1.0	24	15.0	30	N.A.	—	—		—		—		4,069	72	72
564.2	64	653.4	49	1.2	6	15.1	26	3.84	10.3	10.1	30	26.0	31	22.6	30	5,432	62	73
599.3	56	1,292.4	31	1.5	2	15.5	22	2.79	6.5	15.4	3	25.8	32	29.6	4	3,900	77	74
434.6	78	360.8	77	0.1	83	1.0	84	0.18	(86.4)	(17.9)	71	(1.0)	74	18.3	58	3,934	76	75
406.5	84	384.0	74	0.0	86	0.1	86	0.03	(98.3)	(35.6)	75	7.4	64	16.7	64	4,269	70	76
516.0	67	N.A.		0.2	79	2.8	80	N.A.	—	—		—		—		3,319	88	77
533.8	66	593.1	56	0.5	69	6.7	74	1.42	—	—		N.A.		—		3,855	79	78
392.8	87	441.6	68	0.9	44	15.7	21	2.30	10.6	13.3	12	31.0	21	24.1	17	3,028	91	79
388.9	88	N.A.		—		—		N.A.	—	—		29.0	25	6.6	84	3,589	85	80
380.7	90	372.5	76	0.5	73	7.6	72	1.82	(45.5)	1.3	66	7.1	67	18.7	55	3,977	75	81
436.6	77	422.9	70	1.0	37	13.6	50	2.73	8.8	10.4	28	(3.2)	78	21.2	40	3,887	78	82
431.8	80	298.4	82	0.3	76	4.2	78	1.04	131.1	(7.9)	70	61.8	5	7.3	83	3,684	82	83
434.6	79	420.4	71	1.0	31	13.6	48	3.38	5.3	13.5	10	6.7	68	25.7	9	3,007	93	84
383.0	89	383.2	75	0.9	38	14.7	38	2.81	19.1	11.0	24	26.0	30	26.8	5	5,213	64	85
462.5	72	570.6	63	1.0	32	12.5	57	2.01	(0.7)	5.8	53	21.6	43	19.9	48	3,560	86	86
398.0	86	411.1	72	1.0	27	14.8	35	3.12	26.8	10.2	29	30.8	22	22.3	31	3,632	84	87
416.1	82	400.0	73	0.7	58	10.4	66	3.48	28.9	1.6	65	35.8	16	10.2	80	4,153	71	88
369.5	92	345.4	80	0.7	59	11.2	62	2.82	(7.5)	4.2	60	13.5	54	17.8	61	3,315	89	89
318.3	97	N.A.		0.3	77	5.0	76	N.A.	—	—		—		—		132	100	90
408.9	83	355.3	79	0.7	61	9.6	68	2.48	(19.5)	8.2	41	8.8	63	23.2	23	4,065	73	91
489.4	69	515.6	65	1.1	11	12.8	56	1.90	7.3	6.8	50	18.6	47	19.7	49	3,979	74	92
349.2[1]	93	N.A.		—		—		N.A.	—	—		64.0	4	31.5	3	2,965	94	93
378.5	91	432.3	69	1.0	25	14.4	39	3.53	10.3	11.7	20	13.8	52	24.8	13	3,429	87	94
252.7	100	N.A.		(2.0)	97	(41.2)	97	(6.32)	—	—		(1.4)	75	13.2	75	3,268	90	95
450.6	75	N.A.		1.2	8	13.6	47	N.A.	—	—		—		—		2,485	96	96
323.1	96	306.9	81	0.9	40	14.9	33	1.42	10.9	13.3	11	23.3	38	25.3	10	3,010	92	97
454.6	74	573.4	62	1.3	4	14.8	36	3.20	10.3	9.3	34	26.2	29	21.8	36	4,482	67	98
281.1	99	592.0	57	1.1	10	20.4	3	2.14	32.5	14.4	7	72.5	2	31.7	2	2,205	98	99
311.1	98	359.2	78	0.9	43	14.2	43	2.29	11.7	5.8	54	22.2	41	16.1	67	2,958	95	100
128,077.4		117,163.9														1,073,931		

[1] Name changed from Indiana National Corp.
[2] Name changed from First National Cincinnati Corp.
[3] Wholly owned by Industrial Bank of Japan (No. 6 among last year's largest industrial banks).

THE SERVICE 500

THE 50 LARGEST DIVERSIFIED FINANCIAL COMPANIES

RANK BY ASSETS 1989	1988		ASSETS[1] $ Millions	% change from 1988	REVENUES[2] $ Millions	Rank	% change from 1988	PROFITS $ Millions	Rank	% change from 1988	STOCKHOLDER EQUITY $ Millions	Rank
1	1	**AMERICAN EXPRESS** New York	130,855.0	(8.3)	25,047.0	1	9.2	1,157.0	2	11.5	5,691.0	4
2	2	**FEDERAL NAT'L MORTGAGE ASS'N** Washington	124,314.8	10.7	11,497.0	8	8.1	807.3	5	59.2	2,991.2	11
3	3	**SALOMON** New York	118,250.0	38.7	8,999.0	10	46.4	470.0	9	67.9	2,865.0	13
4	4	**AETNA LIFE & CASUALTY** Hartford	87,099.0	7.0	19,671.4	3	(19.0)	676.4	6	(5.1)	6,936.7	3
5	5	**MERRILL LYNCH** New York	63,942.3	(.7)	11,855.4¶	7	12.4	(213.4)	49	(146.1)	3,151.3	9
6	6	**CIGNA** Philadelphia	57,779.0	3.5	15,654.0	4	(12.5)	562.0	8	19.0	5,520.0	5
7	7	**TRAVELERS** Hartford	56,563.0	6.1	12,523.0	6	(34.0)	455.0	11	341.7	4,833.0	6
8	9	**MORGAN STANLEY GROUP** New York	53,275.5	33.0	5,831.0	14	41.9	443.0	12	12.3	2,021.0	19
9	10	**AMERICAN INTERNATIONAL GROUP** New York	46,142.9	23.3	14,150.0	5	3.9	1,367.5	1	12.4	8,405.1	1
10	8	**ITT** New York	45,503.0	8.5	20,054.0	2	3.6	922.0	3	12.9	8,057.0	2
11	11	**BEAR STEARNS COS.** New York[3]	36,410.4	13.2	2,364.7	33	25.3	172.4	27	20.7	1,065.7	29
12	13	**STUDENT LOAN MARKETING ASS'N** Washington	35,488.4	24.0	3,280.5	25	44.4	257.6	22	14.5	1,037.5	30
13	•	**FEDERAL HOME LOAN MORTGAGE** Reston, Va.	35,462.0	3.2	3,757.0	21	31.0	437.0	13	14.7	1,916.0	22
14	15	**LOEWS** New York	32,451.3	25.6	11,480.0	9	5.7	907.1	4	(0.1)	4,810.5	7
15	12	**AMERICAN GENERAL** Houston	32,062.0	5.4	4,227.0	17	(35.7)	464.0	10	5.0	4,090.0	8
16	14	**TRANSAMERICA** San Francisco	29,839.9	11.5	6,834.1	12	(13.3)	332.2	16	(4.1)	2,928.7	12
17	16	**HOUSEHOLD INTERNATIONAL** Prospect Heights, Ill.	26,162.7	24.4	3,490.1	24	32.3	239.5	23	(2.9)	1,194.0	27
18	17	**LINCOLN NATIONAL** Fort Wayne	25,070.1	19.6	8,181.7	11	11.9	268.8	21	83.3	2,391.8	16
19	18	**PAINE WEBBER GROUP** New York	22,096.3	23.2	2,925.8	26	16.5	52.0	42	22.7	1,001.2	32
20	19	**PRIMERICA** New York	17,955.3	24.4	5,695.3	15	467.4	289.0	20	78.6	2,602.5	15
21	22	**CAPITAL HOLDING** Louisville, Ky.	14,970.0	15.5	2,500.1	30	22.2	219.7	25	15.7	1,516.3	25
22	21	**CONTINENTAL** New York	14,259.0	7.2	6,078.6	13	(8.0)	153.1	28	17,143	2,287.1	18
23	23	**USF&G** Baltimore	13,601.1	10.0	4,701.0	16	(15.8)	119.0	30	(51.8)	2,007.3	20
24	20	**AMBASE** New York[4]	13,078.0	(1.7)	3,526.0	22	18.4	96.0	34	10.3	1,083.0	28
25	24	**KEMPER** Long Grove, Ill.	12,696.1	5.1	2,891.4	27	(17.1)	307.4	17	37.4	1,724.3	24
26	25	**FUND AMERICAN COS.** Greenwich, Conn.[5]	11,720.0	4.7	3,499.0	23	(5.5)	73.0	38	(68.9)	1,935.0	21
27	27	**CHUBB** Warren, N.J.	11,178.6	14.8	4,022.6	19	1.1	420.8	14	17.0	2,603.7	14
28	26	**ST. PAUL COS.** St. Paul	11,030.1	6.2	3,800.9	20	4.7	398.2	15	12.1	2,349.3	17
29	30	**RELIANCE GROUP HOLDINGS** New York	10,400.4	15.0	4,028.8	18	8.0	21.7	44	(7.8)	347.2	44
30	28	**GENERAL RE** Stamford, Conn.	10,389.5	10.6	2,771.3	29	1.3	598.5	7	24.7	3,084.1	10
31	33	**SAFECO** Seattle	9,278.7	20.0	2,816.6	28	(6.7)	300.2	18	11.8	1,850.7	23
32	31	**AON** Chicago	9,156.4	10.8	2,324.7	32	(14.9)	232.4	24	29.4	1,422.4	26
33	34	**BENEFICIAL** Wilmington, Del.	7,947.5	5.3	1,578.3	36	11.3	120.9	29	15.1	911.1	33
34	36	**FIRST EMPIRE STATE** Buffalo	6,233.8	5.5	627.5	44	16.8	41.3	43	(7.2)	406.3	42
35	35	**LOMAS FINANCIAL** Dallas[6]	4,125.8	(37.9)	609.9	45	(49.3)	(296.8)	50	–	210.2	47
36	50	**ALLEGHANY** New York	3,977.8	144.1	1,073.7	41	6.7	55.0	41	19.6	617.0	39
37	45	**DCNY** Wilmington, Del.	3,869.3	62.1	280.9	50	58.0	(1.9)	47	–	114.1	48
38	43	**CHARLES SCHWAB** San Francisco	3,480.3	37.4	553.2	46	41.1	18.9	45	156.0	171.7	47
39	37	**GEICO** Washington	3,434.4	12.2	1,939.4	34	10.4	213.1	26	12.7	898.1	34
40	39	**OHIO CASUALTY** Hamilton	3,145.7	7.7	1,577.1	37	0.1	101.5	32	(20.7)	775.0	36
41	38	**OLD REPUBLIC INTERNATIONAL** Chicago	3,123.5	3.9	1,187.8	40	7.8	99.0	33	94.4	663.2	38
42	41	**HANOVER INSURANCE** Worcester, Mass.	2,954.7	11.5	1,622.5	35	2.7	82.8	35	(30.9)	741.1	37
43	44	**STATESMAN GROUP** Des Moines	2,858.0	18.9	293.3	49	(56.7)	8.3	46	411.6	65.5	49
44	40	**LANDMARK LAND** Carmel, Calif.	2,667.5	(1.0)	526.6	48	9.3	(34.9)	48	(317.4)	10.7	50
45	46	**PROGRESSIVE** Mayfield Heights, Ohio	2,646.8	14.7	1,392.7	38	13.5	78.0	37	(27.8)	435.2	41
46	42	**ALEXANDER & ALEXANDER SERVICES** New York	2,604.7	(1.2)	1,248.9	39	1.7	60.1	40	(11.0)	375.1	43
47	47	**CINCINNATI FINANCIAL** Fairfield, Ohio	2,552.0	20.5	974.4	42	7.1	114.5	31	(11.1)	1,020.3	31
48	•	**LEUCADIA NATIONAL** New York	2,244.7	2.2	710.3	43	(21.1)	64.3	39	201.5	257.7	45
49	49	**MARSH & MCLENNAN COS.** New York	2,035.2	11.2	2,455.4	31	8.1	294.9	19	(0.5)	873.0	35
50	48	**ARGONAUT GROUP** Los Angeles	1,936.6	2.7	546.1	47	8.3	81.6	36	(19.8)	474.6	40
		TOTALS	1,280,318.9		259,677.0			14,107.1			104,739.6	

N.A. Not available
• Not on last year's list
** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 332
† Average for the year, see the reference to "employees" on page 332
‡ Reflects an extraordinary charge of at least 10%, see the explanations of "profits" and "earnings per share" on page 332
§ Dividends paid on mandatory redeemable preferred stock subtracted from profits
¶ As of December 31, 1989, unless otherwise noted. Assets of consolidated subsidiaries are included. Holding companies engaged in commercial banking, savings, or life, health, and accident insurance are listed here only when assets of those busi-

MARKET VALUE 4/20/90		NET PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
		REVENUES		ASSETS		STOCK-HOLDERS' EQUITY			% change from	1979-89 annual growth rate				1979-89 annual average				
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1989/$	1988	%	Rank	1989 %	Rank	%	Rank	Number	Rank	
11,753.9	2	4.6	33	0.9	31	20.3	8	2.70	11.1	8.4	17	34.3	23	20.9	17	107,542	2	1
8,271.9	3	7.0	22	0.6	39	27.0	2	3.14	46.5	12.9	9	103.2	2	22.7	13	2,500	41	2
2,470.6	19	5.2	27	0.4	43	14.2§	24	3.26	97.6	2.1	26	(0.6)	47	8.8	37	8,900	26	3
5,249.3	7	3.4	37	0.8	35	9.7§	38	6.02	(3.5)	(1.8)	32	25.7	28	11.8	33	45,500	4	4
2,387.6	20	(1.8)	48	(0.3)	48	(6.8)	48	(2.31)	(153.8)	–		13.1	39	14.0	28	41,000	5	5
3,792.8	13	3.6	36	1.0	29	10.2	36	7.00	23.2	0.3	30	33.0	24	10.9	35	47,677	3	6
3,213.1	15	3.6	35	0.8	34	9.4	39	4.37	375.0	(0.5)	31	12.6	41	13.3	30	38,000	6	7
2,488.3	18	7.6	21	0.8	33	21.9	7	11.21	9.3	–		18.6	33	–		6,700	31	8
15,653.5	1	9.7	13	3.0	11	16.3	17	8.29	12.0	16.2	3	53.5	13	21.3	16	33,000	7	9
6,444.9	6	4.6	34	2.0	19	11.4	28	6.52	14.4	9.4	15	20.0	32	14.6	25	119,000	1	10
1,102.5	32	8.1	17	0.5	42	15.9	21	1.78	25.8	–		21.2	30	–		5,994	33	11
4,534.1	9	7.9	19	0.7	37	24.8	4	2.53	18.4	–		43.2	17	–		2,084	44	12
4,034.1	11	11.6	5	1.2	25	22.8	6	6.57	13.7	–		36.0	21	–		1,899	45	13
8,120.9	4	7.9	18	2.8	15	18.9	11	12.07	1.1	17.4	2	59.0	10	33.6	2	26,800	8	14
4,440.6	10	11.0	7	1.4	23	11.3	29	3.76	9.3	2.5	25	10.1	43	14.5	27	14,000	17	15
2,703.3	17	4.9	31	1.1	26	11.3	30	4.18	(5.4)	1.3	29	37.2	20	17.0	22	15,500	14	16
1,615.0	28	6.9	23	0.9	30	19.3§	10	6.47	(4.9)	6.9	21	14.5	37	20.2	19	14,500	16	17
2,217.5	24	3.3	39	1.1	28	11.2	31	6.06	88.8	5.5	23	46.7	15	17.1	21	16,465	11	18
430.1	42	1.8	45	0.2	45	5.2	44	1.05	81.0	(2.4)	33	7.7	44	14.5	26	12,900	18	19
3,331.6	14	5.1	30	1.6	20	11.1	34	2.87	(20.5)	–		32.6	25	–		18,000†	10	20
2,014.7	26	8.8	15	1.5	22	14.5	23	4.62	15.5	12.5	10	62.8	7	22.7	12	9,000	25	21
1,581.3	29	2.5	43	1.1	27	6.7	42	2.74	–	(6.0)	34	3.4	45	9.6	36	15,500	15	22
2,363.5	21	2.5	42	0.9	32	5.1§	45	1.57	(44.9)	(9.2)	36	11.0	42	12.3	32	11,500†	20	23
238.6	46	2.7	41	0.7	36	8.9	41	2.82	10.2	–		13.0	40	–		9,400	24	24
1,751.0	27	10.6	9	2.4	17	17.8	13	5.96	56.4	9.7	14	99.9	3	21.5	15	10,000	22	25
1,137.8	31	2.1	44	0.6	40	3.8	46	0.99	(78.0)	–		20.9	31	–		10,639†	21	26
3,799.4	12	10.5	11	3.8	6	16.2	19	9.83	15.0	11.8	11	69.8	4	24.3	10	9,800	23	27
2,859.6	16	10.5	10	3.6	7	16.9	15	8.13	10.2	7.7	19	41.7	18	16.5	23	12,625	19	28
428.7	43	0.5	46	0.2	46	6.3	43	0.29	(9.4)	–		17.2	35	–		8,774	27	29
7,472.9	5	21.6	1	5.8	3	19.4	9	6.52	29.4	15.8	4	59.9	8	24.3	9	2,379	42	30
2,087.0	25	10.7	8	3.2	8	16.2	18	4.75	15.9	10.6	12	69.7	5	20.4	18	8,660	28	31
2,301.9	22	10.0	12	2.5	16	16.3	16	3.54	26.9	7.7	18	57.1	11	22.9	11	16,000	13	32
1,083.7	33	7.7	20	1.5	21	12.8§	26	5.01	19.6	1.7	28	18.1	34	13.3	29	7,200	29	33
434.1	41	6.6	24	0.7	38	10.2	37	5.73	(4.8)	14.2	5	28.1	27	31.5	3	2,347	43	34
24.3	50	(48.7)	50	(7.2)	50	(141.2)	49	(8.20)	–	–		(91.7)	50	(10.6)	40	4,016	39	35
540.9	39	5.1	28	1.4	24	8.9	40	8.59	20.5	6.5	22	31.5	26	26.9	7	5,000	36	36
81.2	48	(0.7)	47	0.0	47	(1.6)	47	(0.23)	–	–		(30.3)	48	28.4	6	442	49	37
388.3	44	3.4	38	0.5	41	11.0	35	0.68	151.9	–		107.0	1	–		2,838	40	38
2,251.8	23	11.0	6	6.2	2	23.7	5	13.74	15.3	12.9	8	24.6	29	31.2	4	6,745	30	39
870.8	35	6.4	25	3.2	9	13.1	25	4.93	(16.2)	3.4	24	38.3	19	15.9	24	5,255	35	40
528.7	40	8.3	16	3.2	10	14.9	22	4.44	103.6	7.0	20	14.2	38	12.8	31	4,919	37	41
567.4	38	5.1	29	2.8	14	11.2	33	4.02	(30.9)	9.7	13	15.7	36	20.1	20	5,850	34	42
25.0	49	2.8	40	0.3	44	12.7	27	0.60	1,548.4	1.8	27	3.0	46	6.0	38	675	48	43
109.0	47	(6.6)	49	(1.3)	49	(325.8)	50	(4.37)	(320.7)	–		(39.0)	49	11.2	34	4,800	38	44
868.7	36	5.6	26	2.9	12	17.9	12	2.93	(24.1)	22.8	1	69.6	6	34.4	1	6,049	32	45
955.5	34	4.8	32	2.3	18	16.0	20	1.48	(9.2)	(6.4)	35	35.1	22	4.1	39	16,000	12	46
1,217.3	30	11.7	4	4.5	4	11.2	32	7.00	(12.1)	13.7	7	55.3	12	25.4	8	1,850	46	47
322.4	45	9.1	14	2.9	13	25.0	3	4.81	196.9	14.1	6	48.7	14	30.8	5	350	50	48
5,078.9	8	12.0	3	14.5	1	33.8	1	4.10	0.2	9.4	16	43.9	16	21.7	14	23,600	9	49
683.4	37	14.9	2	4.2	5	17.2	14	8.26	(12.2)	–		59.5	9	–		850	47	50
138,323.3																800,974		

nesses represent less than 80% of the company's total.
Total revenues during the year, including any consolidated or nonfinancial revenues from manufacturing, retailing, etc., and revenues from discontinued operations when published. All companies on the list must have derived more than 50% of their revenues from financial businesses and have a publicly traded stock.
Figures are for fiscal year ended June 30, 1989.

* Name changed from Home Group.
** Name changed from Fireman's Fund.
^ Name changed from Lomas & Nettleton Financial.

THE 50 LARGEST SAVINGS INSTITUTIONS

RANK BY ASSETS 1989	1988		ASSETS[1] $ Millions	% change from 1988	DEPOSITS $ Millions	Rank	LOANS[2] $ Millions	Rank	PROFITS $ Millions	Rank	% change from 1988
1	1	**H.F. AHMANSON** Los Angeles	44,651.5	10.9	33,086.0	1	38,406.8	1	193.9	1	(4.0)
2	2	**GREAT WESTERN FINANCIAL CORP.** Beverly Hills	37,176.4	13.3	23,784.3	2	33,187.0	2	100.1	5	(59.7)
3	3	**CALFED** Los Angeles	26,190.8	(4.7)	15,667.5	4	18,092.1	4	82.4	6	(38.9)
4	4	**GLENFED** Glendale, Calif.[3]	25,626.2	8.1	15,679.2	3	19,564.0	3	116.0	3	(31.3)
5	7	**GOLDEN WEST FINANCIAL CORP.** Oakland	19,520.6	16.7	11,787.4	6	15,011.0	6	157.9	2	14.2
6	6	**HOMEFED CORP.** San Diego	17,766.7	4.5	13,010.9	5	15,384.5	5	115.7	4	3.9
7	8	**GREAT AMERICAN BANK** San Diego[4]	15,898.6	(1.2)	11,419.3	7	12,934.7	7	(263.4)	45	(623.8)
8	9	**CROSSLAND SAVINGS** New York	14,102.4	(6.9)	8,994.1	11	7,812.8	15	(191.7)	42	(1,355.6)
9	11	**GOLDOME** Buffalo	12,999.1	(13.1)	9,375.7	10	10,605.7	8	(253.0)	44	—
10	5	**MERITOR SAVINGS BANK** Philadelphia[5]	12,639.8	(26.4)	10,503.2	8	10,489.8	9	(55.6)**	31	—
11	16	**DIME SAVINGS BANK OF NEW YORK** Garden City	11,652.2	(3.0)	9,759.2	9	10,255.9	10	(92.3)	36	(215.2)
12	17	**FIRSTFED MICHIGAN CORP.** Detroit[6]	11,490.4	(3.8)	4,347.2	25	9,005.2	12	22.5**	12	(38.4)
13	12	**FRANKLIN SAVINGS ASSOCIATION** Ottawa, Kans.	11,353.3	(15.4)	3,646.4	27	239.2	50	(9.0)**	25	(111.2)
14	14	**COAST SAVINGS FINANCIAL** Los Angeles[7]	11,243.7	(11.1)	8,903.3	12	9,980.9	11	(74.2)	34	(255.2)
15	15	**IMPERIAL CORP. OF AMERICA** San Diego	10,960.8[8]	(10.6)	7,682.9[8]	15	8,135.7[8]	13	N.A.		—
16	18	**EMPIRE OF AMERICA FEDERAL SAVINGS** Buffalo	10,272.5[8]	(8.9)	8,095.2[8]	13	8,005.1[8]	14	N.A.		—
17	21	**STANDARD FEDERAL BANK** Troy, Mich.	9,638.4	0.7	6,168.8	18	7,581.7	16	45.7	8	(27.8)
18	13	**COLUMBIA SAVINGS & LOAN ASS'N** Beverly Hills	9,253.2	(27.4)	7,766.8	14	3,091.4	39	(591.1)	46	(1,010.0)
19	20	**CENTRUST BANK** Miami[9]	8,975.7	(8.1)	6,276.2	17	5,712.9	19	(119.5)**	38	(338.7)
20	22	**ANCHOR SAVINGS BANK** Hewlett, N.Y.[4]	8,968.8	12.9	6,781.4	16	4,722.6	22	(23.1)	28	(445.5)
21	24	**NORTHEAST SAVINGS** Hartford[10]	7,942.7	5.1	4,480.0	22	3,107.4	37	(12.9)**	26	(161.3)
22	23	**ATLANTIC FINANCIAL FEDERAL** Bala Cynwyd, Pa.[9]	7,583.3	(2.8)	4,909.1	20	6,174.2	17	(161.1)	41	(977.1)
23	30	**PEOPLE'S BANK** Bridgeport, Conn.	7,054.4	11.6	5,560.0	19	5,733.3	18	32.5	9	(11.3)
24	28	**WASHINGTON MUTUAL SAVINGS BANK** Seattle	6,594.2	3.6	3,966.7	26	4,093.5	27	19.8	16	(48.6)
25	31	**PERPETUAL FINANCIAL CORP.** Vienna, Va.[11]	6,170.6	5.4	4,411.3	23	4,221.5	26	22.4	13	(28.2)
26	29	**TALMAN HOME FED. S&L ASS'N OF ILL.** Chicago[9]	6,091.8	(3.9)	4,400.8	24	4,737.4	21	20.2	14	(21.2)
27	25	**COMMERCIAL FEDERAL CORP.** Omaha[9]	6,063.6	(8.9)	2,852.5	43	5,007.9	20	2.2**	23	86.2
28	•	**ENSTAR GROUP** Montgomery, Ala.[12]	5,594.4	(8.1)	3,334.5	34	3,948.8	29	(150.7)	40	(448.2)
29	27	**AMERICAN CAPITAL CORP.** Miami	5,435.9	(15.1)	3,633.2	28	4,286.1	25	(35.3)	29	(1,027.4)
30	37	**HOWARD SAVINGS BANK** Newark, N.J.	5,081.4	(2.7)	4,648.2	21	3,525.8	33	(66.1)	33	(288.4)
31	34	**BENJ. FRANKLIN FED. S&L ASS'N** Portland, Oreg.	5,065.1[8]	(7.4)	3,273.3[8]	37	3,844.3[8]	31	N.A.		—
32	38	**FLORIDA FEDERAL SAVINGS BANK** St. Petersburg[3,13]	5,029.8	(2.5)	2,862.6	42	4,355.4	24	(76.4)	35	—
33	42	**CITADEL HOLDING CORP.** Glendale, Calif.	4,980.6	7.3	3,317.0	35	4,496.9	23	8.1	21	(66.2)
34	•	**SOUTHMARK** Dallas[3,14]	4,898.3	(46.5)	3,052.6	39	1,925.8	46	(1,460.3)	47	—
35	39	**FINANCIAL CORP. OF SANTA BARBARA**	4,665.6	(6.9)	1,901.2	50	4,083.4	28	(60.3)	32	—
36	36	**TCF FINANCIAL CORP.** Minneapolis	4,656.7	(11.4)	3,363.4	33	3,871.0	30	19.1**	17	(11.0)
37	45	**AMERICAN SAVINGS BANK** New York	4,430.2	(2.3)	3,451.7	31	2,803.6	44	2.3	22	(93.2)
38	•	**SOCIETY FOR SAVINGS** Hartford	4,417.1	12.4	2,807.4	44	2,823.9	42	46.0	7	38.3
39	40	**FARWEST FINANCIAL** Newport Beach, Calif.	4,345.1	(8.7)	3,457.5	30	3,105.6	38	(46.1)	30	(637.8)
40	43	**AMERIFIRST BANK** Miami[9]	4,299.5	(6.9)	3,296.4	36	3,397.8	35	(117.8)	37	(9,377.8)
41	44	**CITIZENS SAVINGS FINANCIAL CORP.** Miami	4,299.3	(6.1)	2,990.2	41	3,798.4	32	13.9	18	3.9
42	47	**OLD STONE FINANCIAL** Providence	4,245.6	(4.6)	3,214.2	38	3,396.1	36	(20.7)	27	(156.9)
43	48	**DOWNEY S&L ASS'N** Newport Beach, Calif.	4,098.7	(5.4)	3,510.8	29	2,713.5	45	13.6	20	(52.9)
44	49	**ROCHESTER COMM. SAV.** Rochester, N.Y.[15]	3,977.1	(6.2)	2,625.4	46	3,086.1	40	20.0	15	8.7
45	50	**HOME OWNERS SAVINGS BANK** Boston[16]	3,878.7	(8.0)	3,042.1	40	1,540.2	48	(127.5)	39	(722.6)
46	•	**APPLE BANCORP** New York	3,840.1	15.1	3,409.5	32	3,445.9	34	25.1**	10	3.4
47	•	**METROPOLITAN FINANCIAL CORP.** Fargo, N.D.	3,822.5	(6.2)	2,719.4	45	1,670.8	47	24.1	11	112.0
48	41	**SEAMEN'S CORP.** New York	3,822.2	(18.8)	2,241.2	48	883.1	49	(212.7)	43	(1,388.5)
49	46	**SFFED CORP.** San Francisco	3,385.9	(24.7)	2,604.0	47	2,821.7	43	(8.6)	24	(144.9)
50	•	**GREAT LAKES BANCORP** Ann Arbor, Mich.	3,385.4	(6.9)	1,921.3	49	3,067.6	41	13.7	19	(15.8)
		TOTALS	479,536.8		323,992.7		354,185.8		(3,112.1)		

N.A. Not available
• Not on last year's list
** Reflects an extraordinary credit of at least 10%, see the explanations of "profits" and "earnings per share" on page 332

† Average for the year, see the reference to "employees" on page 332
‡ Reflects an extraordinary charge of at least 10%, see the explanations of "profits" and "earnings per share" on page 332
§ Dividends paid on mandatory redeemable preferred stock subtracted from profits

[1] As of December 31, 1989, unless otherwise noted. All companies on the list must have derived more than 50% of their consolidated revenues from chartered thrift institutions, and must have a publicly traded stock.
[2] Net of unearned discount and loan loss reserve. Figure includes lease financing.

STOCKHOLDERS' EQUITY		MARKET VALUE 4/20/90		PROFITS AS PERCENT OF ASSETS		STOCKHOLDERS' EQUITY		EARNINGS PER SHARE 1989/$	% change from 1988	1979-89 annual growth rate		TOTAL RETURN TO INVESTORS 1989		1979-89 annual average		EMPLOYEES		
$ Millions	Rank	$ Millions	Rank	%	Rank	%	Rank			%	Rank	%	Rank	%	Rank	Number	Rank	
2,000.8	1	1,663.8	2	0.4	10	9.7	9	1.95	(4.4)	1.4	4	21.4	10	15.8	3	10,819	3	1
1,988.3	2	2,199.5	1	0.3	19	5.0	19	0.78	(60.0)	(7.3)	5	21.7	9	11.5	5	14,641	2	2
1,424.9	3	455.1	5	0.3	17	5.8	17	3.28	(39.1)	–		(1.8)	15	–		5,676	5	3
1,146.7	4	399.0	6	0.5	9	10.1	7	3.92	(32.1)	–		(12.2)	20	–		7,000	4	4
1,046.3	5	1,582.9	3	0.8	2	15.1	2	2.51	13.8	15.8	1	72.4	2	23.7	1	3,107	11	5
1,042.3	6	573.0	4	0.7	4	11.1	4	5.36	2.7	–		28.9	6	–		4,591	7	6
373.5	15	68.9	25	(1.7)	39	(70.5)	38	(11.00)	(628.8)	–		(36.7)	27	–		3,480	10	7
647.2	7	24.2	34	(1.4)	37	(29.6)	32	(16.85)	–	–		(79.3)	38	–		3,505	9	8
101.7	39	35.1	29	(1.9)	40	(248.8)	42	(9.13)	–	–		5.9	12	–		3,708	8	9
303.7	19	72.3	23	(0.4)	28	(18.3)	30	(1.58)**	–	–		(42.1)	29	–		2,973	12	10
631.9	8	177.0	12	(0.8)	32	(14.6)	28	(4.05)	(215.1)	–		(23.5)	25	–		2,640	16	11
437.4	12	154.9	14	0.2	20	5.1	18	2.03**	(38.7)	–		(0.4)	14	–		1,642	26	12
391.9	14	N.A.		(0.1)	24	(2.3)	24	(0.26)**	(110.9)	–		N.A.		–		573	42	13
225.7	26	127.2	18	(0.7)	31	(32.9)	33	(4.87)	(234.2)	–		(18.3)	24	–		2,027	21	14
140.4[4]	36	1.4	44	–		–		N.A.	–	–		(89.7)	44	(24.2)	11	N.A.		15
(53.5)[5]	48	N.A.		–		–		N.A.	–	–		(81.8)	41	–		N.A.		16
440.8	10	237.2	9	0.5	7	10.4	6	1.48	(28.5)	–		11.2	11	–		2,300	20	17
77.6	42	12.5	38	(6.4)	46	(761.9)	44	(30.11)	(2,042.6)	–		(59.8)	34	–		952	38	18
234.8	25	N.A.		(1.3)	36	(50.9)	36	(15.83)**	(576.8)	–		(90.2)	45	–		2,650	15	19
437.6	11	30.6	31	(0.3)	27	(5.3)	26	(2.14)	–	–		(81.0)	40	–		2,703	14	20
283.3	21	28.6	33	(0.2)	25	(4.6)	25	(3.98)**	(288.9)	–		(46.9)	30	–		1,281	31	21
61.4	44	N.A.		(2.1)	41	(262.6)	43	(39.33)	(1,389.5)	–		(92.2)	46	–		N.A.		22
480.7	9	215.8	10	0.5	8	6.8	13	1.00	122.2	–		N.A.		–		2,750	13	23
424.7	13	244.2	8	0.3	18	4.7	20	1.23	(52.0)	–		35.9	4	–		N.A.		24
315.3	18	60.0	27	0.4	13	7.1	12	1.34	(33.0)	–		(12.3)	21	–		1,711	24	25
331.6	16	44.6	28	0.3	15	6.1	16	2.08	(21.2)	–		(6.1)	19	–		1,850	22	26
129.6	37	20.8	35	0.0	23	1.7	22	0.32**	68.4	–		(51.6)	31	–		1,120	34	27
251.5	24	131.0	17	(2.7)	42	(59.9)	37	(2.74)	(442.5)	–		(59.6)	33	2.31	7	4,982	6	28
73.5	43	7.6	39	(0.6)	30	(48.0)	35	(2.32)	–	–		(78.3)	37	(10.4)	9	N.A.		29
288.4	20	73.6	22	(1.3)	35	(22.9)	31	(4.61)	(289.7)	–		(56.3)	32	–		2,393	19	30
179.7[6]	30	N.A.		–		–		N.A.	–	–		(34.3)	26	–		N.A.		31
35.7	46	3.5	43	(1.5)	38	(214.0)	40	(8.13)	–	–		(79.4)	39	–		1,559	27	32
195.1	28	142.6	15	0.2	21	4.2	21	2.47	(66.3)	–		26.8	7	–		805	40	33
(758.9)	50	4.5	41	(29.8)	47	–		(33.16)	–	–		(93.2)	47	–		30,000†	1	34
(25.7)	47	3.7	42	(1.3)	34	–		(10.01)	–	–		(75.0)	36	(23.6)	10	729	41	35
176.1	32	70.0	24	0.4	11	10.9	5	2.63**	(12.0)	–		57.1	3	–		2,400	18	36
177.5	31	19.5	37	0.1	22	1.3	23	(0.49)	(110.5)	–		(38.3)	28	–		1,278	32	37
271.7	22	131.0	16	1.0	1	16.9	1	3.86	37.9	–		(4.7)	18	–		1,268	33	38
96.7	40	19.5	36	(1.1)	33	(47.6)	34	(5.90)	(641.3)	–		(16.5)	23	5.6	6	475	43	39
78.7	41	29.0	32	(2.7)	43	(149.7)	39	(10.44)	(8,800.0)	–		(87.8)	43	–		1,744	23	40
166.0	33	31.8	30	0.3	16	8.4	11	4.48	2.8	12.1	2	(2.0)	16	14.7	4	953	37	41
115.8	38	84.6	20	(0.5)	30	(17.9)	29	(2.77)	(169.4)	–		(63.1)	35	1.4	8	2,431	17	42
219.4	27	266.4	7	0.3	14	6.2	14	0.85	(52.8)	3.5	3	76.2	1	22.6	2	1,079	35	43
325.6	17	164.1	13	0.5	6	6.2	15	1.45	8.2	–		(13.5)	22	–		1,459	29	44
52.5	45	6.6	40	(3.3)	44	(242.7)	41	(23.44)	(1,402.2)	–		(86.6)	42	–		1,400	30	45
253.8	23	197.7	11	0.7	3	9.9	8	5.46**	3.2	–		2.8	13	–		1,500	28	46
188.7	29	80.8	21	0.6	5	12.8	3	3.15	88.3	–		25.4	8	–		1,683	25	47
(111.1)	49	N.A.		(5.6)	45	–		(13.11)	(1,385.3)	–		N.A.		–		381	44	48
161.9	34	87.0	19	(0.3)	26	(5.3)	27	(1.12)	(145.2)	–		34.0	5	–		826	39	49
148.2	35	64.6	26	0.4	12	9.3	10	3.49	(16.1)	–		(3.1)	17	–		1,048	36	50
17,627.2		10,047.7														144,092		

[1] Figures are for fiscal year ended June 30, 1989.
[2] Name changed from Great American First Savings Bank.
[3] Name changed from Meritor Financial Group.
[4] Name changed from First Federal of Michigan.
[5] Name changed from Coast Savings & Loan Assoc.
[6] Figure as of September 30, 1989.
[7] Figures are for fiscal year ended September 30, 1989.
[8] Figures are for fiscal year ended March 31, 1989.
[9] Figures are for fiscal year ended October 31, 1989.
[10] Includes figures of American Savings & Loan Association of Florida (No. 35 last year).
[11] Name changed from Florida Federal Savings & Loan Assoc.
[12] Company was No. 29 on 1988 Diversified Financial list.
[13] Figures are for fiscal year ended November 30, 1989.
[14] Name changed from Home Owners Federal S&L Assoc.

THE 50 LARGEST LIFE INSURANCE COMPANIES

RANK BY ASSETS 1989	1988		ASSETS[1] $ Millions	% change from 1988	PREMIUM AND ANNUITY INCOME[2] $ Millions	Rank	NET INVESTMENT INCOME $ Millions	Rank	NET GAIN FROM OPERATIONS[3] $ Millions	Mutual Rank	Stock Rank
1	1	**PRUDENTIAL OF AMERICA** Newark, N.J.*	129,118.1	11.1	21,535.2	1	8,078.1	1	360.0	1	
2	2	**METROPOLITAN LIFE** New York*	98,740.3	4.8	15,183.1	2	7,380.7	2	183.6	4	
3	3	**EQUITABLE LIFE ASSURANCE** New York*	52,511.9	4.2	4,620.1	8	2,852.7	6	(28.7)	20	
4	4	**AETNA LIFE** Hartford[8]	52,022.6	6.4	8,642.6	3	3,551.4	4	353.2		1
5	5	**TEACHERS INSURANCE & ANNUITY** New York	44,374.1	14.9	3,198.0	12	3,979.3	3	148.6		5
6	6	**NEW YORK LIFE** New York*	37,302.4	6.1	6,428.1	4	2,948.7	5	116.4	7	
7	7	**CONNECTICUT GENERAL LIFE** Bloomfield[9]	33,991.2	9.3	2,513.6	19	2,130.1	9	276.9		2
8	8	**TRAVELERS** Hartford	32,087.5	4.6	5,169.3	7	2,247.6	8	106.1		9
9	9	**JOHN HANCOCK MUTUAL LIFE** Boston*	30,924.8	9.2	6,017.6	5	2,287.1	7	199.8	2	
10	10	**NORTHWESTERN MUTUAL LIFE** Milwaukee*	28,500.0	12.4	3,751.9	10	2,130.0	10	188.5	3	
11	11	**MASSACHUSETTS MUTUAL LIFE** Springfield*	24,842.3	10.9	2,930.4	15	1,866.9	11	123.8	6	
12	12	**PRINCIPAL MUTUAL LIFE** Des Moines*	24,825.5	12.8	5,495.5	6	1,809.8	12	160.6	5	
13	14	**MUTUAL OF NEW YORK** New York*	17,181.3	9.0	2,716.6	17	1,115.4	15	12.0	15	
14	13	**NEW ENGLAND MUTUAL LIFE** Boston*	16,666.7	4.9	2,672.3	18	1,135.2	14	(13.9)	19	
15	33	**LINCOLN NATIONAL LIFE** Fort Wayne[10,11]	16,161.9	184.2	3,875.3	9	1,029.9	16	71.8		13
16	15	**EXECUTIVE LIFE** Los Angeles	13,168.2	2.8	637.1	47	1,361.9	13	153.1		4
17	17	**IDS LIFE** Minneapolis[12]	13,150.2	22.1	1,921.9	23	936.9	18	111.8		8
18	18	**MUTUAL BENEFIT LIFE** Newark, N.J.*	11,601.3	9.0	2,824.0	16	1,009.3	17	44.4	11	
19	16	**CONNECTICUT MUTUAL LIFE** Hartford*	11,133.7	2.9	1,610.5	25	815.0	23	53.2	9	
20	21	**ALLSTATE LIFE** Northbrook, Ill.[13]	10,994.1	24.7	3,107.7	14	936.1	19	183.0		3
21	20	**VARIABLE ANNUITY LIFE** Houston[14]	10,857.7	18.6	1,290.9	33	878.1	21	55.8		18
22	19	**STATE FARM LIFE** Bloomington, Ill.	10,839.0	13.0	1,513.8	28	932.3	20	133.7		7
23	22	**NATIONWIDE LIFE** Columbus, Ohio	10,451.7	20.1	1,548.2	27	628.7	27	22.6		23
24	24	**AETNA LIFE & ANNUITY** Hartford[8]	9,731.9	22.5	1,609.7	26	555.7	30	59.8		15
25	23	**NEW YORK LIFE & ANNUITY** Wilmington, Del.	9,567.9	12.6	1,101.8	38	833.5	22	104.9		10
26	26	**EQUITABLE VARIABLE LIFE** New York	8,904.1	13.7	968.5	40	621.1	28	1.5		29
27	25	**PACIFIC MUTUAL LIFE** Newport Beach, Calif.*	8,630.1	10.1	1,312.9	32	665.5	25	28.1	12	
28	28	**CONTINENTAL ASSURANCE** Chicago[15]	8,586.8	17.8	3,465.0	11	240.9	49	68.3		14
29	30	**HARTFORD LIFE** Hartford[16]	8,238.8	32.4	2,199.0	20	456.1	34	22.2		24
30	35	**JACKSON NATIONAL LIFE** Lansing, Mich.	7,828.7	39.2	2,057.5	21	675.4	24	58.4		17
31	29	**TRANSAMERICA LIFE & ANNUITY** Los Angeles[17]	7,700.5	20.9	1,372.2	31	658.0	26	3.9		28
32	31	**PROVIDENT NATIONAL ASSURANCE** Chattanooga	6,922.2	13.9	1,497.8	29	613.1	29	(3.1)		30
33	36	**TRANSAMERICA OCCIDENTAL LIFE** Los Angeles[17]	6,579.8	18.2	1,488.3	30	499.8	32	59.5		16
34	37	**KEYSTONE PROVIDENT LIFE** Providence	6,261.0	21.2	943.0	42	537.8	31	40.9		20
35	34	**PHOENIX MUTUAL LIFE** Hartford*	6,162.6	8.5	1,010.3	39	382.8	44	25.6	13	
36	42	**STATE MUTUAL OF AMERICA** Worcester, Mass.*	5,609.1	15.2	1,619.3	24	439.8	37	50.9	10	
37	40	**GENERAL AMERICAN LIFE** St. Louis*	5,550.8	12.2	1,203.5	35	401.3	41	8.1	17	
38	44	**GUARDIAN OF AMERICA** New York*	5,466.1	18.4	3,182.3	13	399.6	42	72.9	8	
39	39	**PENN MUTUAL LIFE** Philadelphia*	5,310.7	6.5	643.3	45	394.4	43	7.0	18	
40	43	**KEMPER INVESTORS LIFE** Chicago[18]	5,304.3	14.2	677.0	44	438.6	38	37.8		21
41	38	**NORTHWESTERN NATIONAL LIFE** Minneapolis	5,278.7	4.1	1,287.5	34	443.7	36	45.7		19
42	41	**AMERICAN FAMILY LIFE ASSURANCE** Columbus, Ga.	5,204.7	6.1	1,967.7	22	299.5	48	140.3		6
43	•	**MONARCH LIFE INSURANCE** Springfield, Mass.	5,127.0	10.1	232.4	50	87.7	50	12.0		27
44	•	**UNITED PACIFIC LIFE** Federal Way, Wash.[19]	5,040.9	21.6	1,111.4	37	486.0	33	36.4		22
45	45	**MINNESOTA MUTUAL LIFE** St. Paul*	4,954.4	10.9	1,135.1	36	403.9	40	9.4	16	
46	•	**FIRST CAPITAL LIFE INSURANCE** San Diego	4,744.6	16.6	966.9	41	409.9	39	16.9		25
47	46	**UNUM LIFE** Portland, Me.	4,674.7	6.6	641.6	46	370.4	46	15.1		26
48	47	**MUTUAL OF AMERICA LIFE** New York*	4,673.8	8.2	369.4	49	333.9	47	13.4	14	
49	50	**SUN LIFE OF AMERICA** Los Angeles	4,577.0	14.6	920.0	43	448.0	35	89.1		11
50	48	**FRANKLIN LIFE** Springfield, Ill.[20]	4,514.2	6.7	492.0	48	377.5	45	85.4		12
		TOTALS	902,591.8		144,678.9		64,515.3		4,126.7		

DATA FOR ALL COMPANIES ARE CALCULATED ON THE STATUTORY ACCOUNTING BASIS REQUIRED BY STATE INSURANCE REGULATORY AUTHORITIES.

• Not on last year's list
* Indicates a mutual company
N.A. Not available
As of December 31, 1989

[2] Includes premium income from life, accident, and health policies, annuities, and contributions to deposit administration funds
[3] After dividends to policyholders and federal income taxes, excluding realized capital gains and losses. Figures in parentheses indicate a loss.
[4] After dividends to policyholders and federal income taxes, including realized capital gains and losses. Figures in parentheses indicate a loss.
[5] Face value of all life policies, including variable life insurance, as of December 31, 1989
[6] Changes between December 31, 1988, and December 31, 1989

NET INCOME[4]				NET INCOME AS PERCENT OF ASSETS		LIFE INSURANCE IN FORCE[5]		INCREASE IN LIFE INSURANCE IN FORCE[6]				EMPLOYEES[7]		
$ Millions	Mutual Rank	Stock Rank	% change from 1988	%	Rank	$ Millions	Rank	$ Millions	Rank	%	Rank	Number	Rank	
644.2	1		(26.5)	0.5	28	727,424.3	2	35,926.1	2	5.2	28	69,551	1	1
494.0	2		(40.9)	0.5	27	728,269.9	1	86,931.4	1	13.6	6	46,000	2	2
193.4	7		(21.4)	0.4	35	320,472.7	3	1,729.1	31	0.5	35	23,000	5	3
341.3		2	14.5	0.7	20	282,865.6	4	32,274.3	3	12.9	7	17,377	9	4
406.1		1	(2.7)	0.9	12	24,033.4	34	2,495.0	29	11.6	13	3,495	30	5
212.9	5		(16.8)	0.6	26	256,182.1	5	19,234.9	8	8.1	21	19,438	7	6
288.5		4	(12.6)	0.8	15	147,235.4	12	10,930.7	13	8.0	22	12,896	13	7
121.5		10	(56.0)	0.4	34	181,329.9	9	2,748.2	27	1.5	33	38,000	3	8
231.7	4		25.3	0.7	18	198,180.4	8	13,499.1	11	7.3	23	15,655	11	9
371.6	3		214.2	1.3	6	201,130.2	7	22,348.5	5	12.5	11	8,750	17	10
141.9	9		211.4	0.6	25	105,767.0	14	10,345.2	16	10.8	14	10,226	15	11
209.9	6		104.0	0.8	16	99,804.8	15	10,862.8	14	12.2	12	10,985	14	12
154.2	8		2.1	0.9	13	78,275.1	24	3,549.4	25	4.7	29	4,453	23	13
25.5	17		68.5	0.2	47	76,136.1	25	4,201.8	21	5.8	27	6,235	21	14
125.1		8	273.1	0.8	17	145,862.9	13	3,980.8	22	–		4,312	24	15
5.3		29	(97.9)	0.0	49	60,417.4	28	3,879.2	23	6.9	24	799	44	16
117.3		11	26.6	0.9	14	27,084.3	33	2,276.9	30	9.2	19	6,856	20	17
42.6	13		(49.6)	0.4	36	85,550.8	20	13,708.3	9	19.1	3	4,654	22	18
68.0	11		40.0	0.6	23	61,996.3	27	5,031.5	20	8.8	20	24,240	4	19
198.6		5	–	1.8	5	82,654.0	22	(10,177.3)	50	–		2,393	35	20
52.2		16	–	0.5	29	2.3	49	(0.1)	40	–		1,641	37	21
140.6		7	1.9	1.3	7	156,340.2	10	19,255.7	7	14.0	5	19,505	6	22
26.4		21	74.8	0.3	43	23,656.1	37	1,275.7	32	5.9	26	7,745	19	23
62.5		15	–	0.6	21	34,023.6	30	3,838.0	24	12.7	9	3,229	33	24
123.9		9	77.9	1.3	8	42,339.5	29	(659.7)	44	–		19,438	8	25
32.2		18	(54.1)	0.4	37	94,739.1	16	10,570.9	15	12.6	10	N.A.		26
27.7	15		(13.6)	0.3	40	22,726.5	38	(2,899.4)	48	–		3,471	31	27
29.5		19	(55.9)	0.3	39	85,113.9	21	7,442.9	19	9.6	17	16,700	10	28
20.2		23	(26.9)	0.2	45	23,963.0	35	2,704.1	28	12.7	8	978	42	29
87.8		13	30.8	1.1	10	89,643.4	18	25,484.1	4	39.7	1	1,171	38	30
5.5		28	27.0	0.1	48	248.9	47	(30.1)	41	–		1,030	39	31
(7.0)		30	(132.5)	(0.1)	50	0.0		0.0		–		57	48	32
84.3		14	81.0	1.3	9	231,778.1	6	12,853.6	12	5.9	25	3,824	28	33
25.8		22	(44.1)	0.4	33	2,773.1	44	118.9	38	4.5	30	225	47	34
27.6	16		1.7	0.4	30	71,398.1	26	1,011.4	34	1.4	34	2,853	34	35
57.5	12		26.1	1.0	11	30,259.3	31	(1,716.7)	47	–		3,903	27	36
13.0	19		(7.2)	0.2	46	148,893.7	11	22,177.4	6	17.5	4	7,840	18	37
131.8	10		139.5	2.4	3	92,001.3	17	7,943.0	18	9.4	18	3,420	32	38
22.5	18		156.3	0.4	32	23,856.5	36	1,181.6	33	–		1,784	36	39
32.6		17	1.8	0.6	22	1,863.6	45	37.1	39	2.0	31	400	45	40
19.1		25	(37.6)	0.4	38	81,962.1	23	13,580.0	10	20.0	2	9,564	16	41
143.0		6	32.7	2.7	2	6,977.8	41	623.6	36	9.8	16	15,000	12	42
15.1		26	17.7	0.3	41	12,340.5	40	675.6	35	–		930	43	43
14.3		27	83.0	0.3	42	1,388.7	46	(577.8)	43	–		352	46	44
12.4	20		570.2	0.3	44	88,242.9	19	8,585.9	17	10.8	15	3,542	29	45
27.4		20	(8.7)	0.6	24	21,643.7	39	3,510.3	26	–		1,014	40	46
20.1		24	(27.0)	0.4	31	2,841.8	43	(114.9)	42	–		4,175	25	47
32.2	14		–	0.7	19	11.0	48	(1,380.4)	46	–		995	41	48
89.2		12	312.8	1.9	4	3,530.5	42	(1,000.3)	45	–		N.A.		49
333.4		3	294.8	7.4	1	27,381.4	32	521.5	37	1.9	32	3,927	26	50
6,096.6						5,312,613.3		410,788.1				468,028		

[1] Includes home office, field force, and full-time agents.
[2] Wholly owned by Aetna Life & Casualty (F-4).
[3] Wholly owned by Cigna (F-6).
[4] Wholly owned by Lincoln National (F-18).
[5] Figures include Lincoln National Pension (No. 27 on 1988 Life Insurance list), acquired January 1, 1989.
[6] Wholly owned by American Express (F-1).
[7] Wholly owned by Sears Roebuck (R-1).
[8] Wholly owned by American General (F-15).
[9] Wholly owned by CNA Financial, which is 83% owned by Loews (F-14).
[10] Wholly owned by ITT (F-10).
[11] Wholly owned by Transamerica (F-16).
[12] Wholly owned by Kemper (F-25).
[13] Wholly owned by Reliance Group Holdings (F-29).
[14] Wholly owned by American Brands (No. 64 on the FORTUNE 500 Industrial list).

THE 50 LARGEST RETAILING COMPANIES

RANK BY SALES 1989	1988		SALES[1] $ Millions	% change from 1988	PROFITS $ Millions	Rank	% change from 1988	ASSETS $ Millions	Rank	STOCKHOLDERS EQUITY $ Millions	Rank
1	1	**SEARS ROEBUCK** Chicago[2]	53,912.9	7.3	1,508.5	1	3.8	86,971.6	1	13,622.1	1
2	2	**K MART** Troy, Mich.	29,557.0	8.3	323.0	11	(59.8)	13,145.0	2	4,972.0	2
3	3	**WAL-MART STORES** Bentonville, Ark.	25,921.8	25.5	1,075.9	2	28.5	8,198.5	5	3,965.6	4
4	5	**AMERICAN STORES** Irvine, Calif.	22,004.2	19.1	118.1	21	20.2	7,398.0	7	1,201.8	13
5	4	**KROGER** Cincinnati[2]	19,087.8	0.2	(72.7)‡	43	(310.7)	4,242.0	12	(2,965.5)	49
6	6	**J.C. PENNEY** Dallas	16,405.0	10.6	802.0	3	(0.6)	12,698.0	3	4,353.0	3
7	7	**SAFEWAY STORES** Oakland[2]	14,324.6	5.2	2.5	36	(92.0)	4,538.0	11	(388.9)	46
8	8	**DAYTON HUDSON** Minneapolis	13,644.7	11.8	410.5	6	43.0	6,683.7	8	1,752.7	9
9	9	**MAY DEPARTMENT STORES** St. Louis	12,043.0	1.0	498.0	5	(6.7)	7,802.0	6	2,319.0	6
10	10	**GREAT ATLANTIC & PACIFIC TEA** Montvale, N.J.[3]	10,072.7	5.7	127.6	20	23.3	2,640.4	19	970.8	16
11	11	**WINN-DIXIE STORES** Jacksonville, Fla.[4]	9,151.1	1.6	134.5	17	15.3	1,575.1	33	783.2	20
12	12	**WOOLWORTH** New York	8,820.0	9.1	329.0	9	14.2	3,907.0	13	2,076.0	7
13	13	**SOUTHLAND** Dallas[2]	8,421.3	5.9	(1,306.9)	48	—	3,438.8	15	(1,715.8)	48
14	15	**MELVILLE** Harrison, N.Y.[2]	7,554.0	11.4	398.1	7	12.3	3,031.8	17	1,618.3	11
15	16	**ALBERTSON'S** Boise, Idaho	7,422.7	9.6	196.6	13	20.9	1,862.7	27	929.5	17
16	17	**R.H. MACY** New York[5]	6,974.1	21.7	(53.7)‡	40	—	6,560.7	10	(325.7)	45
17	•	**SUPERMARKETS GENERAL HOLD.** Woodbridge, N.J.	6,298.7	5.6	(76.5)	44	—	2,556.5	21	(117.0)	41
18	18	**MCDONALD'S** Oak Brook, Ill.[2]	6,142.0	10.3	727.0	4	12.6	9,175.0	4	3,550.0	5
19	20	**WALGREEN** Deerfield, Ill.[6]	5,395.5	10.5	154.2	14	19.5	1,681.1	30	823.4	19
20	21	**PUBLIX SUPER MARKETS** Lakeland, Fla.[7]	5,386.2	12.1	128.5	19	25.4	1,307.2	37	837.3	18
21	27	**VONS COS.** El Monte, Calif.[2]	5,222.2	33.3	(25.1)	39	—	1,654.6	32	190.0	37
22	24	**PRICE** San Diego[6]	5,033.4	21.6	117.0	22	23.5	1,116.8	42	535.1	26
23	23	**FEDERATED DEPARTMENT STORES** Cincinnati	4,867.2	7.2	(1,503.9)	49	(1,046.4)	6,572.2	9	(307.0)	43
24	26	**TOYS "R" US** Paramus, N.J.	4,787.8	19.7	321.1	12	19.8	3,074.7	16	1,705.3	10
25	28	**FOOD LION** Salisbury, N.C.[2]	4,717.1	23.6	139.8	16	24.2	1,281.7	38	538.5	25
26	25	**THE LIMITED** Columbus, Ohio	4,647.9	14.2	346.9	8	41.5	2,410.5	23	1,240.5	12
27	22	**STOP & SHOP COS.** Braintree, Mass.[7]	4,639.1	(0.7)	(23.2)	38	—	1,885.8	26	93.0	38
28	31	**AMES DEPARTMENT STORES** Rocky Hill, Conn.[3]	4,624.0[8]	37.5	N.A.		—	N.A.		N.A.	
29	29	**TANDY** Fort Worth[4]	4,180.7	10.2	323.5	10	2.3	2,574.3	20	1,782.8	8
30	36	**CIRCLE K** Phoenix[9]	3,493.1	33.6	15.4	34	(74.5)	2,044.9	24	330.4	30
31	30	**TW SERVICES** Paramus, N.J.[2]	3,485.0	(2.5)	(57.3)	42	(206.6)	3,632.2	14	207.0	36
32	32	**SERVICE MERCHANDISE** Nashville[2]	3,307.1	6.9	72.0	28	(5.9)	1,663.9	31	(42.0)	40
33	37	**DILLARD DEPARTMENT STORES** Little Rock, Ark.	3,049.1	19.2	148.1	15	30.1	2,496.3	22	1,094.7	14
34	47	**COSTCO WHOLESALE** Kirkland, Wash.[6]	2,999.7	47.8	27.0	33	86.9	623.6	48	242.6	34
35	34	**GIANT FOOD** Landover, Md.[3]	2,987.2	9.8	98.0	25	29.6	982.5	43	427.7	28
36	39	**RITE AID** Shiremanstown, Pa.[3]	2,868.3	15.4	95.2	26	(34.1)	1,417.5	36	636.2	23
37	35	**CARTER HAWLEY HALE STORES** Los Angeles[3]	2,787.4	6.5	13.5‡	35	(23.7)	1,988.4	25	(211.6)	42
38	48	**HOME DEPOT** Atlanta	2,771.9	38.6	112.0	24	45.9	1,117.5	41	512.1	27
39	•	**GRAND UNION** Wayne, N.J.[10]	2,716.9	(5.4)	43.4	32	96.0	713.2	46	275.0	32
40	33	**ALLIED STORES** Cincinnati	2,706.3	(9.1)	(925.2)	47	(1,900.1)	3,020.0	18	(820.1)	47
41	40	**REVCO D.S.** Twinsburg, Ohio[11]	2,700.5	12.1	(133.4)	46	—	1,844.8	28	(314.3)	44
42	42	**NORDSTROM** Seattle	2,671.1	14.7	114.9	23	(6.8)	1,707.4	29	733.3	21
43	38	**LOWE'S COS.** North Wilkesboro, N.C.	2,650.5	5.3	74.9	27	8.3	1,147.4	40	645.6	22
44	41	**UNITED STATES SHOE** Cincinnati	2,557.2	9.1	49.2	31	279.4	1,164.2	39	548.6	24
45	44	**MERCANTILE STORES** Wilmington, Del.	2,312.8	2.1	130.3	18	(9.8)	1,548.4	34	1,077.3	15
46	46	**FRED MEYER** Portland, Oreg.	2,284.5	10.2	(6.8)	37	(118.7)	797.1	45	251.5	33
47	•	**TJX COS.** Framingham, Mass.	2,160.6	12.5	(78.3)	45	—	949.1	44	228.5	35
48	49	**BRUNO'S** Birmingham, Ala.[4]	2,134.1	7.7	50.2	30	23.3	660.7	47	290.7	31
49	50	**LONGS DRUG STORES** Walnut Creek, Calif.	2,110.6	9.6	61.3	29	9.7	566.7	49	335.4	29
50	45	**BEST PRODUCTS** Richmond	2,094.6	0.3	(53.8)	41	—	1,438.2	35	71.2	39
		TOTALS	388,107.3		4,970.8			241,515.5		50,559.7	

N.A. Not available
• Not on last year's list
** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 332

† Average for the year; see the reference to "employees" on page 332.
‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits" and "earnings per share" on page 332.
§ Dividends paid on mandatory redeemable preferred stock subtracted from profits.

[1] Net sales include operating revenues and nonretailing activities and revenues from discontinued operations when they are published. All figures are for fiscal year ended January 31, 1990, unless otherwise noted. Sales of subsidiaries are included when

MARKET VALUE 4/20/90		NET PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
		REVENUES		ASSETS		STOCKHOLDERS' EQUITY			% change from	1979-89 annual growth rate			1979-89 annual average					
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1989/$	1988	%	Rank	1989 %	Rank	%	Rank	Number	Rank	
12,764.8	2	2.8	21	1.7	32	11.1	29	4.30	12.0	5.4	24	(2.3)	33	13.9	32	500,000	1	1
6,789.5	7	1.1	31	2.5	31	6.5	32	1.61	(59.8)	(1.6)	27	3.8	30	12.6	33	365,000	2	2
27,811.4	1	4.2	10	13.1	3	27.1	2	1.90	28.4	36.6	2	43.8	14	46.1	2	271,000	3	3
2,163.4	20	0.5	33	1.6	33	9.8	30	3.45	35.8	9.0	22	(0.7)	31	22.6	22	170,400	6	4
1,000.0	29	(0.4)	38	(1.7)	42	–		(0.92)‡	(483.3)	–		66.2	5	30.8	10	170,000	7	5
7,845.0	4	4.9	7	6.3	23	18.4	14	6.31	4.8	13.6	14	49.1	9	24.3	18	198,000	4	6
N.A.		0.0	36	0.1	36	–		N.A.	–	–		–		–		110,000	11	7
4,748.6	10	3.0	16	6.1	24	23.4	5	5.37	55.7	10.2	19	63.8	6	22.9	21	140,000	8	8
6,218.9	8	4.1	11	6.4	22	21.5	9	3.52	(3.0)	10.4	18	36.4	17	24.8	17	115,000	10	9
2,105.8	21	1.3	30	4.8	27	13.1	25	3.34	23.2	–		33.4	18	22.0	23	92,000	15	10
2,355.9	19	1.5	29	8.5	14	17.2	18	3.36	17.1	5.3	25	53.7	8	20.7	25	94,000	14	11
3,910.4	12	3.7	13	8.4	15	15.8	19	5.11	14.3	5.4	23	27.3	22	23.7	19	132,000	9	12
N.A.		(15.5)	47	(38.0)	49	–		N.A.	–	–		–		–		48,114	24	13
4,826.5	9	5.3	6	13.1	2	24.6§	4	3.56	9.2	13.4	15	23.5	24	24.8	16	100,541	13	14
3,749.8	13	2.6	22	10.6	7	21.1	10	2.93	20.1	16.8	9	48.8	10	30.9	9	55,000	20	15
N.A.		(0.8)	41	(0.8)	37	–		N.A.	–	–		–		–		78,000	16	16
N.A.		(1.2)	42	(3.0)	43	–		N.A.	–	–		–		–		51,000	22	17
11,403.0	3	11.8	1	7.9	17	20.5	11	1.95	13.7	15.5	12	45.3	12	24.9	15	176,000†	5	18
2,591.3	16	2.9	19	9.2	13	18.7	13	2.50	19.0	16.0	11	57.2	7	30.5	12	46,547	25	19
N.A.		2.4	23	9.8	12	15.3	22	2.56	24.9	–		N.A.		–		61,000	18	20
803.6	32	(0.5)	39	(1.5)	40	(13.2)	35	(0.65)	–	–		69.6	3	30.4	13	35,000†	31	21
1,798.2	22	2.3	25	10.5	8	21.9	7	2.30	19.2	–		27.7	21	–		12,545	49	22
N.A.		(30.9)	48	(22.9)	47	–		N.A.	–	–		–		–		60,300	19	23
7,760.6	5	6.7	4	10.4	9	18.8	12	1.64	20.6	26.2	4	44.9	13	35.9	6	38,039	28	24
4,146.5	11	3.0	17	10.9	5	26.0	3	0.43	22.9	17.5	8	17.1	26	30.7	11	40,736	27	25
7,293.5	6	7.5	3	14.3	1	28.0	1	1.92	41.2	52.5	1	29.7	19	53.1	1	63,000	17	26
N.A.		(0.5)	40	(1.2)	39	(25.0)	36	(1.09)	–	–		N.A.		–		42,000	26	27
75.1	37	–		–		–		N.A.	–	–		(25.4)	37	21.1	24	55,000	21	28
2,471.3	17	7.7	2	12.6	4	18.1	16	3.64	2.8	16.3	10	(3.3)	34	18.2	28	38,000	29	29
70.2	38	0.4	35	0.8	34	3.1§	33	0.21	(81.7)	(5.4)	28	(70.0)	38	7.9	34	27,264	36	30
N.A.		(1.6)	43	(1.6)	41	(27.7)	37	N.A.	–	–		–		–		108,000	12	31
340.7	35	2.2	26	4.3	29	–		1.39	(7.9)	10.5	17	42.5	16	15.2	31	20,184	43	32
2,626.5	15	4.9	8	5.9	26	13.5	24	4.36	23.5	27.1	3	68.1	4	45.7	3	26,304†	38	33
1,267.7	27	0.9	32	4.3	28	11.1	28	0.97	70.2	–		122.0	1	–		9,500	50	34
1,650.7	23	3.3	15	10.0	11	22.9	6	1.63	29.9	19.1	6	19.5	25	38.8	4	24,500	39	35
1,338.2	24	3.3	14	6.7	20	15.0	23	2.30	(34.3)	13.7	13	4.7	29	20.3	26	29,934	34	36
172.8	36	0.5	34	0.7	35	–		0.62‡	(13.9)	(13.6)	29	(1.5)	32	20.2	27	37,000	30	37
3,532.1	14	4.0	12	10.0	10	21.9	8	1.42	42.0	–		74.3	2	–		17,500	46	38
N.A.		1.6	28	6.1	25	15.8	20	N.A.	–	–		–		–		23,000	40	39
N.A.		(34.2)	49	(30.6)	48	–		N.A.	–	–		–		–		31,500	33	40
N.A.		(4.9)	46	(7.2)	45	–		(32.30)	–	–		N.A.		–		26,600	37	41
2,366.0	18	4.3	9	6.7	19	15.7	21	1.41	(6.6)	18.9	7	24.1	23	31.7	8	28,000†	35	42
1,280.6	26	2.8	20	6.5	21	11.6	27	2.01	9.8	10.1	20	43.1	15	17.4	29	15,271	47	43
920.1	31	1.9	27	4.2	30	9.0	31	1.10	279.3	4.7	26	(16.9)	36	24.9	14	48,692	23	44
1,317.2	25	5.6	5	8.4	16	12.1	26	3.54	(9.7)	11.8	16	(6.6)	35	23.3	20	22,000†	42	45
359.6	34	(0.3)	37	(0.9)	38	(2.7)	34	(0.28)	(118.7)	–		14.7	27	–		22,000	41	46
985.5	30	(3.6)	45	(8.2)	46	(34.3)	38	(1.10)	–	–		11.1	28	35.2	7	32,000	32	47
1,121.8	28	2.4	24	7.6	18	17.3	17	0.62	24.0	20.2	5	45.4	11	37.3	5	18,149	44	48
749.9	33	2.9	18	10.8	6	18.3	15	3.01	9.5	9.1	21	28.7	20	15.3	30	14,200	48	49
N.A.		(2.6)	44	(3.7)	44	(75.5)	39	N.A.	–	–		–		–		18,000	45	50
144,732.6																3,957,820		

they are consolidated. All companies on the list must have derived more than 50% of their revenues from retail operations.
[2] Figures are for fiscal year ended December 31, 1989.
[3] Figures are for fiscal year ended February 28, 1989.
[4] Figures are for fiscal year ended June 30, 1989.
[5] Figures are for fiscal year ended July 31, 1989.
[6] Figures are for fiscal year ended August 31, 1989.
[7] Name changed from SSC Holdings.
[8] FORTUNE estimate.
[9] Figures are for fiscal year ended April 30, 1989.
[10] Figures are for fiscal year ended March 31, 1989.
[11] Figures are for fiscal year ended May 31, 1989.

THE 50 LARGEST TRANSPORTATION COMPANIES

RANK BY REVENUES 1989	1988		REVENUES[1] $ Millions	% change from 1988	PROFITS $ Millions	Rank	% change from 1988	ASSETS $ Millions	Rank	STOCKHOLDERS EQUITY $ Millions	Rank
1	1	**UNITED PARCEL SERVICE** Greenwich, Conn.	12,380.7	12.2	693.4	1	(8.6)	7,888.1	5	3,588.7	5
2	3	**AMR** Fort Worth	10,589.5	20.0	454.8	5	(4.6)	10,877.4	3	3,765.8	4
3	2	**UAL** Elk Grove, Ill.	9,914.5	10.0	324.2	10	(71.2)	7,206.7	8	1,564.3	10
4	6	**DELTA AIR LINES** Atlanta[2]	8,089.5	17.0	460.9	4	50.2	6,484.0	10	2,619.7	7
5	4	**CSX** Richmond	7,821.0	(9.8)	452.0	6	207.5	12,298.0	2	3,397.0	6
6	5	**TEXAS AIR** Houston	6,768.7	(21.0)	(885.6)	49	—	7,656.1	6	(1,105.7)	49
7	7	**UNION PACIFIC** Bethlehem, Pa.	6,590.0	(3.0)	595.0	3	(7.6)	12,459.0	1	3,911.0	3
8	9	**NWA** Eagan, Minn.	6,553.8	16.0	355.2	8	163.0	5,337.4	13	2,453.3	8
9	8	**USAIR GROUP** Arlington, Va.	6,257.3	9.6	(63.2)	46	(138.3)	6,069.0	12	1,892.7	9
10	15	**FEDERAL EXPRESS** Memphis[3,4]	5,183.3	33.5	184.6	14	(1.7)	5,293.4	14	1,493.5	11
11	12	**NORFOLK SOUTHERN** Norfolk, Va.	4,675.2	4.8	606.2	2	(4.5)	10,244.3	4	5,168.6	1
12	11	**BURLINGTON NORTHERN** Fort Worth	4,614.9	(1.8)	243.0	11	56.0	6,147.8	11	1,080.2	13
13	13	**TRANS WORLD AIRLINES** Mt. Kisco, N.Y.	4,507.3	3.4	(298.5)	47	(219.5)	3,820.9	16	(344.7)	47
14	14	**PAN AM** New York	3,794.4	(8.9)	(336.6)	48	—	2,440.8	18	(629.7)	48
15	17	**CONSOLIDATED FREIGHTWAYS** Menlo Park, Calif.[5]	3,765.6	40.0	12.0	31	(89.4)	2,391.8	19	630.1	18
16	16	**CONSOLIDATED RAIL** Philadelphia	3,473.0	(0.5)	148.0	16	(51.6)	7,471.0	7	4,044.0	2
17	10	**SANTA FE PACIFIC** Chicago[6]	3,049.8	(38.2)	14.6	28	—	6,609.2	9	851.6	15
18	19	**ROADWAY SERVICES** Akron	2,672.9	22.4	95.5	18	19.0	1,273.1	26	718.3	16
19	18	**SOUTHERN PACIFIC TRANS.** San Francisco	2,382.5	(1.2)	97.9	17	(55.4)	4,731.5	15	1,389.8	12
20	20	**AMERICAN PRESIDENT COS.** Oakland	2,247.2	5.4	11.3	32	(86.1)	1,661.3	21	594.3	20
21	21	**YELLOW FREIGHT SYSTEM** Overland Park, Kans.	2,221.1	10.1	47.8	22	(30.7)	1,081.7	29	438.6	24
22	•	**PITTSTON** Greenwich, Conn.[7]	1,634.6	3.5	3.8	35	(92.2)	984.2	30	424.1	25
23	•	**BP PIPELINES (ALASKA)** Cleveland[8]	1,041.4	(11.4)	342.5	9	(29.1)	3,351.1	17	858.4	14
24	•	**GREYHOUND LINES** Dallas	1,040.1	12.6	0.7	37	—	592.8	36	29.6	42
25	25	**SOUTHWEST AIRLINES** Dallas	1,031.7	22.6	71.6	19	23.5	1,415.1	25	587.3	21
26	28	**AMERICA WEST AIRLINES** Phoenix	1,004.2	29.5	20.0**	26	113.8	835.9	35	87.2	36
27	24	**CHICAGO & NORTH WESTERN HOLDINGS** Chicago[9]	967.2	(2.8)	(20.8)	42	(125.7)	1,937.5	20	80.5	38
28	29	**AIRBORNE FREIGHT** Seattle	949.9	23.7	19.1	27	171.2	470.6	39	168.1	31
29	26	**ALASKA AIR GROUP** Seattle	929.2	14.1	42.9	23	14.6	874.1	34	341.9	26
30	30	**ALEXANDER & BALDWIN** Honolulu	846.3	20.6	202.7	12	32.1	1,139.4	28	605.1	19
31	31	**UNIGROUP** Fenton, Mo.	750.1	7.5	9.6	34	52.8	219.2	48	54.2	39
32	27	**ARKANSAS BEST** Fort Smith	716.4	(10.2)	(12.7)	40	—	477.7	38	18.6	43
33	•	**EXXON PIPELINE** Houston	703.2	(8.0)	355.5	7	16.7	1,640.5	22	509.8	23
34	33	**MAYFLOWER GROUP** Carmel, Ind.	677.3	10.7	(1.8)**	39	—	353.2	44	9.9	45
35	32	**CAROLINA FREIGHT** Cherryville, N.C.	671.5	3.3	1.2	36	(88.3)	347.3	45	130.9	33
36	34	**PRESTON** Preston, Md.	619.0	4.3	(0.8)	38	(111.6)	337.4	46	110.1	34
37	•	**ARCO PIPE LINE** Independence, Kans.	596.4	(2.9)	198.4	13	(8.8)	1,637.5	23	575.7	22
38	35	**SOO LINE** Minneapolis	551.0	(3.4)	(26.0)	44	(266.9)	887.2	33	242.8	29
39	36	**ILLINOIS CENTRAL RAILROAD** Chicago	547.0	(1.7)	9.7	33	(78.9)	1,164.9	27	82.2	37
40	•	**COLONIAL PIPELINE** Atlanta	509.6	1.8	155.5	15	(1.0)	897.0	32	48.2	41
41	41	**J.B. HUNT TRANSPORT** Lowell, Ark.	509.3	29.7	30.6	24	(7.4)	384.7	42	175.5	30
42	39	**KANSAS CITY SOUTHERN IND.** Kansas City, Mo.	506.1	(0.3)	47.9	21	—	964.9	31	339.1	27
43	40	**MIDWAY AIRLINES** Chicago	493.5	19.8	(20.7)	41	(416.9)	468.5	40	54.2	40
44	47	**BRANIFF** Orlando, Fla.[10]	484.6	62.9	(24.6)	43	—	237.5	47	10.7	44
45	43	**GRAND TRUNK** Detroit	393.3	1.2	13.8	29	68.5	561.6	37	292.2	28
46	44	**HAL** Honolulu	350.4	(1.0)	(46.9)	45	—	216.2	49	6.6	46
47	46	**OVERSEAS SHIPHOLDING GROUP** New York	333.2	8.4	52.0	20	12.0	1,540.6	24	700.8	17
48	45	**TRANSCON** Orange, Calif.	298.2[11]	(7.4)	N.A.		—	N.A.		N.A.	
49	•	**INTERNATIONAL SHIPHOLDING** New Orleans	270.7	58.9	12.6	30	(39.7)	422.3	41	99.6	35
50	50	**MIDLAND ENTERPRISES** Cincinnati	240.3	8.0	22.7	25	45.2	381.9	43	137.4	32
		TOTALS	137,218.1		4,670.9			154,183.3		44,302.1	

N.A. Not available.
• Not on last year's list.
** Reflects an extraordinary credit of at least 10%; see the explanations of "profits" and "earnings per share" on page 332.

† Average for the year; see the reference to "employees" on page 332.
§ Dividends paid on mandatory redeemable preferred stock subtracted from profits.
[1] Consolidated operating revenues include those from nontransportation activities, other income, and sales from discontinued operations when they are published. All figures are for the fiscal year ended December 31, 1989, unless otherwise noted. All companies must derive more than 50% of their operating revenues from common carrier operations and file public financial statements.
[2] Figures are for fiscal year ended June 30, 1989.

MARKET VALUE 4/20/90		NET PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
		REVENUES		ASSETS		STOCKHOLDERS' EQUITY			% change from	1979-89 annual growth rate				1979-89 annual average				
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1989/$	1988	%	Rank	1989 %	Rank	%	Rank	Number	Rank	
N.A.		5.6	15	8.8	6	19.3	9	4.28	(8.7)	25.0	1	—		—		237,700†	1	1
3,970.6	3	4.3	20	4.2	20	12.1	22	7.16	(9.6)	10.5	7	8.2	18	19.2	9	77,000	2	2
3,363.0	5	3.3	26	4.5	17	20.7	8	14.96	(60.5)	—		56.4	2	23.5	3	72,300	3	3
3,556.0	4	5.7	14	7.1	9	17.6	11	9.37	48.7	10.5	6	39.6	7	16.0	16	58,784	4	4
3,214.1	7	5.8	13	3.7	23	13.3	17	4.34	366.7	6.6	9	17.3	15	22.9	5	53,097†	7	5
301.5	25	(13.1)	48	(11.6)	47	—		(22.71)	—	—		(3.2)	24	2.8	25	53,055	8	6
6,816.7	1	9.0	10	4.8	16	15.2	14	5.62	(0.5)	3.4	13	23.1	10	11.6	20	48,126†	9	7
N.A.		5.4	16	6.7	10	14.5	15	N.A.	—	—		—		—		39,323	11	8
1,236.3	13	(1.0)	40	(1.0)	40	(4.0)§	39	(1.73)	(145.4)	—		(3.0)	23	17.8	11	53,700	6	9
2,959.9	8	3.6	24	3.5	24	12.4	20	3.53	(0.8)	19.0	3	(9.6)	25	14.65	19	58,000	5	10
6,364.6	2	13.0	7	5.9	12	11.7	24	3.48	(0.9)	5.1	12	33.9	9	21.9	6	33,274†	13	11
2,582.1	9	5.3	17	4.0	22	22.4§	7	3.19	56.4	(0.3)	15	47.0	4	26.5	2	32,900	14	12
N.A.		(6.6)	46	(7.8)	45	—		N.A.	—	—		—		—		32,895	15	13
407.5	22	(8.9)	47	(13.8)	48	—		(2.31)	—	—		16.7	16	(7.9)	27	28,750	18	14
616.6	17	0.3	34	0.5	33	1.9	33	0.33	(89.0)	(15.1)	17	(16.9)	30	16.8	14	40,800	10	15
1,921.4	10	4.3	21	2.0	30	3.7	31	2.17	(51.1)	—		46.5	5	—		31,574†	16	16
3,331.6	6	0.5	33	0.2	36	1.7	34	0.09	—	(27.5)	20	7.8	19	16.9	13	20,138	20	17
1,497.3	11	3.6	23	7.5	8	13.3	18	2.44	22.0	5.5	11	41.9	6	16.0	17	34,500	12	18
N.A.		4.1	22	2.1	29	7.0	29	N.A.	—	—		—		—		22,335	19	19
487.3	20	0.5	32	0.7	32	(0.1)§	37	(0.04)	(101.2)	—		(15.8)	29	—		4,994	33	20
773.7	15	2.2	27	4.4	18	10.9	27	1.66	(30.8)	8.6	8	(13.2)	28	17.6	12	29,400†	17	21
593.5	18	0.2	35	0.4	34	0.9	35	0.10	(92.1)	(24.5)	19	23.1	11	0.0	26	14,500	21	22
N.A.		32.9	3	10.2	5	39.9	3	N.A.	—	—		—		—		N.A.		23
N.A.		0.1	37	0.1	37	2.5	32	N.A.	—	—		—		—		12,700	22	24
685.4	16	6.9	11	5.1	13	12.2	21	2.37	28.8	11.6	5	19.2	14	18.1	10	7,760	28	25
170.2	26	2.0	29	2.4	28	23.0	6	1.00**	96.1	—		55.8	3	—		10,722	23	26
N.A.		(2.1)	42	(1.1)	41	(25.8)	42	N.A.	—	—		—		—		7,562	30	27
379.9	23	2.0	28	4.1	21	11.4	25	2.67	164.4	2.1	14	66.0	1	6.7	22	9,900	25	28
356.1	24	4.6	19	4.9	15	12.6	19	2.71	14.3	14.7	4	3.9	20	20.5	8	7,620	29	29
1,395.4	12	24.0	5	17.8	2	33.5	5	4.38	43.1	21.1	2	21.7	12	29.4	1	3,123	39	30
N.A.		1.3	31	4.4	19	17.8	10	N.A.	—	—		—		—		900	44	31
N.A.		(1.8)	41	(2.7)	42	(68.4)	44	N.A.	—	—		—		—		9,541	26	32
N.A.		50.6	1	21.7	1	69.7	2	N.A.	—	—		—		—		580	48	33
N.A.		(0.3)	39	(0.5)	39	(18.2)	41	(0.07)**	—	—		—		—		2,200	41	34
121.9	28	0.2	36	0.3	35	0.9	36	0.16	(89.3)	(15.9)	18	(21.8)	31	21.1	7	10,248	24	35
60.5	30	(0.1)	38	(0.3)	38	(0.8)	38	(0.15)	(111.8)	—		(30.4)	33	5.7	23	9,201	27	36
N.A.		33.3	2	12.1	4	34.5	4	N.A.	—	—		—		—		725	45	37
N.A.		(4.7)	44	(2.9)	43	(10.7)	40	(2.74)	(267.1)	—		2.4	21	5.3	24	4,564†	35	38
N.A.		1.8	30	0.8	31	11.8	23	N.A.	—	—		—		—		3,124	38	39
N.A.		30.5	4	17.3	3	322.6	1	N.A.	—	—		—		—		664	47	40
514.1	19	6.0	12	8.0	7	17.4	12	1.30	(7.1)	—		(12.2)	27	—		7,380	31	41
416.4	21	9.5	8	5.0	14	14.1	16	4.59	—	6.0	10	37.1	8	15.2	18	4,120	36	42
129.2	27	(4.2)	43	(4.4)	44	(40.0)§	43	(2.15)	(458.3)	—		2.0	22	—		5,493	32	43
N.A.		(5.1)	45	(10.4)	46	(230.3)	45	(1.83)	—	—		N.A.		—		4,700	34	44
N.A.		3.5	25	2.5	27	4.7	30	N.A.	—	—		—		—		3,715†	37	45
39.5	31	(13.4)	49	(21.7)	49	(707.7)	46	(24.00)	—	—		(11.3)	26	16.3	15	3,075	40	46
833.0	14	15.6	6	3.4	25	7.4	28	1.46	13.2	(2.2)	16	19.8	13	8.9	21	2,175	42	47
7.9	32	—		—		—		N.A.	—	—		(25.0)	32	(12.7)	28	N.A.		48
102.7	29	4.7	18	3.0	26	11.1§	26	2.24	(50.1)	—		15.4	17	23.1	4	668	46	49
N.A.		9.4	9	5.9	11	16.5	13	N.A.	—	—		—	—	—	—	1,798	43	50
49,205.5																1,211,403		

[1] Figures are for fiscal year ended May 31, 1989.
[4] Figures include Tiger International (No. 22 on 1988 Transportation list), acquired February 1, 1989.
[5] Figures include Emery Air Freight (No. 23 on 1988 Transportation list), acquired April 3, 1989.
[6] Name changed from Santa Fe Southern Pacific.
[7] Company was No. 53 on 1988 Diversified Service list.
[8] Name changed from Sohio Alaska Pipeline.
[9] Name changed from CNW.
[10] Figures are for fiscal year ended January 31, 1989.
[11] FORTUNE estimate.

RANK BY ASSETS 1989	1988		ASSETS[1] $ Millions	% change from 1988	OPERATING REVENUES[2] $ Millions	Rank	% change from 1988	PROFITS $ Millions	Rank	% change from 1988	STOCKHOLDERS' EQUITY $ Millions	Rank
1	1	**GTE** Stamford, Conn.	31,986.5	2.8	17,541.4	1	6.6	1,417.3	2	15.7	8,402.7	5
2	2	**BELLSOUTH** Atlanta	30,049.8	5.5	13,996.3	2	2.9	1,741.1	1	4.5	13,102.6	1
3	4	**BELL ATLANTIC** Philadelphia	26,219.7	6.0	11,448.6	4	5.2	1,074.5‡	7	(18.4)	8,590.6	3
4	3	**NYNEX** New York	25,909.0	2.2	13,210.6	3	4.3	807.6	10	(38.6)	9,369.1	2
5	5	**US WEST** Englewood, Colo.	25,425.9	13.4	9,690.6	6	5.1	1,110.7	5	(1.9)	8,071.3	7
6	7	**PACIFIC GAS & ELECTRIC** San Francisco	21,352.0	1.3	8,719.5	9	14.0	900.6	8	1,350	8,465.6	4
7	6	**PACIFIC TELESIS GROUP** San Francisco	21,194.0	0.0	9,593.0	7	1.2	1,242.0	3	4.5	7,888.0	8
8	8	**SOUTHWESTERN BELL** St. Louis	21,160.5	0.8	8,729.8	8	3.3	1,092.8	6	3.1	8,366.5	6
9	9	**SOUTHERN** Atlanta	20,086.0	1.8	7,520.0	10	3.9	846.0	9	—	6,861.0	11
10	10	**AMERICAN INFORMATION TECH.** Chicago	19,833.0	3.5	10,211.3	5	3.1	1,238.2	4	0.1	7,685.9	9
11	11	**COMMONWEALTH EDISON** Chicago	17,948.1	0.7	5,751.0	13	2.5	693.7	13	(5.9)	7,367.3	10
12	12	**TEXAS UTILITIES** Dallas	17,219.2	7.2	4,320.5	17	4.0	779.1	11	21.2	6,330.3	12
13	15	**SCECORP** Rosemead, Calif.	15,443.1	3.9	7,072.7	11	13.1	778.2	12	2.2	5,288.7	13
14	16	**AMERICAN ELECTRIC POWER** Columbus, Ohio	14,745.8	3.4	5,140.4	15	6.2	628.9	14	0.3	4,394.3	15
15	13	**ENTERGY** New Orleans[3]	14,715.2	(7.7)	3,724.0	19	4.4	(472.6)	48	(215.0)	4,219.5	17
16	19	**PUBLIC SERVICE ENTERPRISE GROUP** Newark, N.J.	12,919.4	10.5	4,804.9	16	9.3	542.1	18	2.6	4,190.7	18
17	17	**PHILADELPHIA ELECTRIC** Philadelphia	12,720.4	7.2	3,405.6	23	5.5	590.4	16	4.3	4,367.2	16
18	18	**FPL GROUP** North Palm Beach, Fla.	12,325.3	4.5	6,179.8	12	5.6	410.4	23	(8.3)	3,452.2	21
19	21	**PACIFICORP** Portland, Oreg.	11,894.6	4.4	3,717.4	20	5.6	465.6	19	4.2	3,006.6	23
20	23	**HOUSTON INDUSTRIES** Houston	11,681.9	14.3	3,789.8	18	3.8	413.5	21	4.6	3,675.5	20
21	20	**CENTERIOR ENERGY** Independence, Ohio	11,666.5	0.8	2,302.4	38	13.0	266.9	33	—	2,794.6	25
22	28	**TELE-COMMUNICATIONS** Denver	11,432.0	33.3	3,026.0	27	32.6	(257.0)	46	(558.9)	908.0	49
23	22	**DOMINION RESOURCES** Richmond	11,033.5	7.3	3,699.9	21	10.6	410.7	22	(6.3)	3,420.7	22
24	25	**CONSOLIDATED EDISON OF NEW YORK** New York	10,349.5	8.4	5,623.5	14	10.1	606.1	15	1.1	4,975.4	14
25	24	**DETROIT EDISON** Detroit	9,949.6	(1.1)	3,203.0	25	3.3	426.0	20	—	2,657.4	27
26	26	**DUKE POWER** Charlotte, N.C.	9,542.4	7.3	3,654.5	22	0.8	571.6	17	3.9	4,084.0	19
27	30	**CMS ENERGY** Dearborn, Mich.	8,614.5	3.7	2,961.1	28	0.6	312.1	28	14.9	1,959.7	34
28	29	**LONG ISLAND LIGHTING** Hicksville, N.Y.	8,520.0	2.3	2,381.2	35	11.4	(95.8)	45	—	1,941.7	35
29	31	**CENTRAL & SOUTH WEST** Dallas	8,347.0	2.9	2,549.0	33	1.5	337.0	27	(5.3)	2,647.0	28
30	32	**OHIO EDISON** Akron	7,722.9	2.2	2,155.0	40	0.6	361.0	25	64.9	2,878.2	24
31	33	**PENNSYLVANIA POWER & LIGHT** Allentown	7,599.0	1.0	2,356.4	36	6.4	353.4	26	6.4	2,370.7	29
32	34	**CAROLINA POWER & LIGHT** Raleigh, N.C.	7,575.4	0.9	2,480.8	34	9.1	376.1	24	91.1	2,658.0	26
33	35	**NIAGARA MOHAWK POWER** Syracuse, N.Y.	7,575.1	7.1	2,906.0	30	3.8	150.8	41	(27.8)	1,914.5	36
34	14	**PINNACLE WEST CAPITAL** Phoenix	7,019.5	(53.4)	1,536.1	46	(26.5)	(551.4)	49	(13,257)	1,414.3	45
35	37	**GULF STATES UTILITIES** Beaumont, Texas	6,726.6	(1.9)	1,607.4	45	5.7	(45.6)‡	44	(144.2)	2,243.8	38
36	39	**GENERAL PUBLIC UTILITIES** Parsippany, N.J.	6,688.3	4.3	2,911.2	29	2.7	282.5	31	(0.5)	2,063.1	33
37	38	**NORTHEAST UTILITIES** West Springfield, Mass.	6,523.2	(3.6)	2,330.5	37	12.1	209.1	36	(10.6)	1,752.4	37
38	•	**PANHANDLE EASTERN** Houston[4]	6,265.6	—	2,781.0	32	—	29.2‡	43	—	1,415.1	44
39	45	**BALTIMORE GAS & ELECTRIC** Baltimore	5,985.7	16.8	2,004.1	43	7.5	276.3	32	(8.9)	2,170.4	32
40	43	**COLUMBIA GAS SYSTEM** Wilmington, Del.	5,878.4	4.2	3,242.1	24	3.6	145.8	42	22.5	1,620.3	40
41	41	**CONTEL** Atlanta	5,846.0	(0.3)	3,120.0	26	5.3	287.0	29	3.9	1,653.0	39
42	42	**UNION ELECTRIC** St. Louis	5,760.3	(1.1)	2,010.3	42	(0.9)	285.6	30	(2.0)	2,182.1	31
43	40	**ILLINOIS POWER** Decatur	5,609.0	(7.3)	1,312.6	49	2.2	(288.4)	47	(252.3)	1,553.8	42
44	•	**OGLETHORPE POWER** Tucker, Ga.	5,288.7	2.1	1,018.0	50	8.5	N.A.[5]		—	194.2	50
45	46	**NEW YORK STATE ELECTRIC & GAS** Binghamton	4,670.3	(0.5)	1,427.7	47	6.5	157.8	40	(8.0)	1,385.7	47
46	•	**POTOMAC ELECTRIC POWER** Washington	4,642.7	—	1,394.9	48	—	214.6	35	—	1,393.7	46
47	49	**FLORIDA PROGRESS** St. Petersburg	4,634.0	7.7	2,129.4	41	6.4	187.1	38	4.1	1,372.3	48
48	50	**CONSOLIDATED NATURAL GAS** Pittsburgh	4,601.2	12.0	2,806.1	31	13.7	181.8	39	(5.8)	1,671.9	38
49	47	**NORTHERN STATES POWER** Minneapolis	4,592.8	2.2	1,989.7	44	(0.8)	229.0	34	3.3	1,486.0	43
50	48	**ALLEGHENY POWER SYSTEM** New York	4,433.3	2.3	2,258.2	39	4.0	194.9	37	(5.0)	1,582.4	41
		TOTALS	599,922.5		233,745.7			21,907.1			195,460.2	

N.A. Not available.
• Not on last year's list.
† Average for the year; see the reference to "employees" on page 332.
‡ Reflects an extraordinary charge of a least 10%; see the explanations of "profit" and "earnings per share" on page 332.
§ Dividends paid on mandatory redeemable preferred stock subtracted from profits.

[1] Assets are shown as of December 31, 1989. Only assets of consolidated subsidiaries are included.
[2] Gross receipts from operations during 1989 include non-utility revenues from manufacturing, transportation, and other activi-

MARKET VALUE 4/20/90		NET PROFITS AS PERCENT OF						EARNINGS PER SHARE				TOTAL RETURN TO INVESTORS				EMPLOYEES		
		REVENUES		ASSETS		STOCKHOLDERS' EQUITY			% change from 1988	1979-89 annual growth rate				1979-89 annual average				
$ Millions	Rank	%	Rank	%	Rank	%	Rank	1989/$		%	Rank	1989 %	Rank	%	Rank	Number	Rank	
20,726.4	2	8.1	37	4.4	18	16.9	2	4.16	16.2	4.0	16	66.0	5	22.9	7	155,000	1	1
25,705.4	1	12.4	15	5.8	5	13.3	18	3.64	3.7	–		52.8	11	–		101,230	2	2
18,832.6	3	9.4	32	4.1	27	12.5	24	5.43‡	(18.3)	–		64.3	6	–		79,100	4	3
15,932.4	7	6.1	40	3.1	39	8.6	40	4.10	(38.2)	–		46.4	16	–		95,400	3	4
13,206.6	8	11.5	20	4.4	20	13.8	13	6.02	(2.4)	–		46.6	15	–		70,587	6	5
9,276.9	9	10.3	30	4.2	24	10.4§	37	1.90	–	0.7	30	35.3	24	18.2	29	26,200	11	6
17,922.8	4	12.9	12	5.9	3	15.7	5	3.02	7.5	–		71.0	2	–		68,452	7	7
16,533.0	5	12.5	14	5.2	6	13.1	19	3.64	3.1	–		66.4	4	–		66,180	8	8
7,970.3	10	11.2	22	4.2	25	12.3	26	2.68	(1.5)	5.9	8	41.0	17	22.0	11	30,530	10	9
16,245.2	6	12.1	17	6.2	1	16.1	3	4.59	0.9	–		49.4	14	–		77,326	5	10
6,699.5	12	12.1	18	3.9	32	8.6§	41	2.83	(6.0)	1.2	29	23.8	42	18.9	27	17,845	17	11
6,188.0	13	18.0	1	4.5	17	12.3	28	4.44	11.0	6.1	5	37.7	19	17.5	31	15,248	20	12
7,892.4	11	11.0	26	5.0	7	14.7	10	3.56	2.0	4.6	13	30.6	30	22.9	6	17,010	18	13
5,781.9	14	12.2	16	4.3	22	14.3	11	3.25	0.3	3.6	20	31.3	28	18.5	28	22,700	12	14
4,091.5	23	(12.7)	47	(3.2)	47	(11.2)	45	(2.31)	(214.9)	–		52.1	12	15.1	34	13,190	23	15
5,330.3	17	11.3	21	4.2	26	12.9	21	2.62	1.9	3.3	23	28.8	35	20.2	22	13,216	22	16
3,497.6	29	17.3	2	4.6	14	13.5§	17	2.36	1.3	2.4	25	27.7	38	19.5	25	11,244	27	17
4,147.8	22	6.6	38	3.3	37	11.9	32	3.12	(8.8)	4.0	17	25.4	41	21.1	17	18,900	16	18
4,891.9	18	12.5	13	3.9	31	14.8§	9	1.81	4.6	3.9	18	40.0	18	20.0	23	15,492	19	19
4,000.9	24	10.9	27	3.5	35	11.2	35	3.32	(0.6)	0.3	31	37.2	22	17.2	32	12,878	25	20
2,509.3	33	11.6	19	2.3	41	9.6	38	1.90	–	(1.4)	33	67.2	3	16.9	33	9,062	32	21
4,590.1	19	(8.5)	46	(2.2)	46	(28.3)	48	(0.73)	(571.0)	–		36.8	23	31.8	1	34,000	9	22
4,340.0	20	11.1	24	3.7	33	12.0	30	4.14	(8.4)	5.4	10	21.3	44	22.8	9	13,343	21	23
5,618.4	15	10.8	28	5.9	4	12.1§	29	2.49	1.0	8.2	3	34.1	26	26.8	2	19,798	14	24
3,653.2	27	13.3	10	4.3	21	15.5§	6	2.65	–	3.4	22	58.7	8	20.5	20	10,254	29	25
5,469.2	16	15.6	4	6.0	2	14.0	12	5.13	4.5	5.9	7	28.9	34	22.3	10	19,628	15	26
2,412.3	34	10.5	29	3.6	34	15.9	4	3.80	14.8	1.6	28	56.4	10	14.4	35	9,646	30	27
2,099.8	41	(4.0)	45	(1.1)	45	(21.0)§	47	(1.57)	–	–		61.0	7	9.3	40	6,239	43	28
3,669.7	26	13.2	11	4.0	29	12.7	23	3.25	(5.2)	3.7	19	35.1	25	21.5	14	8,423	34	29
2,898.8	31	16.8	3	4.7	12	12.4§	25	2.18	78.7	1.9	27	37.5	20	19.4	26	6,905	42	30
3,101.8	30	15.0	7	4.7	13	13.5§	16	4.05	8.6	2.0	26	27.9	37	20.8	19	8,108	36	31
3,749.0	25	15.2	6	5.0	8	13.0§	20	4.20	105.9	3.2	24	33.1	27	21	21	8,100	37	32
1,769.3	45	5.2	41	2.0	42	6.4§	42	0.78	(35.5)	(9.0)	35	16.3	47	12.8	37	11,739	26	33
1,127.4	49	(35.9)	49	(7.9)	49	(39.0)	49	(6.36)	(12,820.0)	–		(22.9)	49	6.9	42	9,000	33	34
1,256.1	48	(2.8)	44	(0.7)	44	(2.0)	44	(1.00)‡	(370.3)	–		50.8	13	9.3	41	4,885	47	35
2,388.0	35	9.7	31	4.2	23	13.7	14	5.01	5.5	12.4	1	30.7	29	19.8	24	13,013	24	36
2,200.5	38	9.0	34	3.2	38	11.9	31	1.92	(10.7)	4.6	12	29.3	32	21.9	13	8,280	35	37
2,351.9	37	1.0	43	0.5	43	2.1	43	0.41‡	–	(20.4)	36	26.3	39	14.0	36	6,078	44	38
2,357.9	36	13.8	9	4.6	16	11.8§	33	3.05	(12.1)	6.0	6	18.4	46	22.0	12	9,103	31	39
2,152.5	40	4.5	42	2.5	40	9.0	39	3.21	30.5	(3.1)	34	58.1	9	12.0	38	10,800	28	40
4,152.8	21	9.2	33	4.9	10	17.4	1	1.80	2.9	5.3	11	75.5	1	24.2	5	21,800	13	41
2,668.0	32	14.2	8	5.0	9	12.9§	22	2.61	2.0	4.2	15	28.0	36	21.0	18	7,136	41	42
1,397.8	46	(22.0)	48	(5.1)	48	(18.6)	46	(4.34)	(361.4)	–		2.1	48	11.9	39	4,242	49	43
N.A.		–		–		–		N.A.	–	–		–		–		540	50	44
1,395.8	47	11.1	25	3.4	36	11.3§	34	2.53	(10.0)	(1.1)	32	37.4	21	18.0	30	4,558	48	45
2,076.8	42	15.4	5	4.6	15	15.0§	7	2.16	0.9	9.6	2	26.2	40	25.2	3	5,500†	46	46
1,907.2	44	8.8	35	4.0	28	13.6	15	3.67	4.3	5.9	9	22.6	43	21.2	16	7,490	39	47
3,621.9	28	6.5	39	4.0	30	10.9	36	2.20	(6.0)	3.4	21	29.9	31	24.3	4	7,357	40	48
2,157.7	39	11.2	23	4.8	11	14.9	8	3.24	4.2	6.3	4	29.3	33	22.8	8	7,580	38	49
1,992.8	43	8.6	36	4.4	19	12.3	27	3.72	(6.1)	4.4	14	21.3	45	21.5	15	5,917	45	50
295,959.3																1,226,252		

ties, other income, and revenues from discontinued operations, when they are published. All companies on the list must derive more than 50% of their revenues from utility operations.

[3] Name changed from Middle South Utilities.

[4] Figures include Texas Eastern (No. 44 on 1988 Utilities list), acquired April 27, 1989.

[5] Cooperatives provide only net margin figures, which are not comparable with the profit figures in this list.

DEFINITIONS AND EXPLANATIONS

ASSETS

Assets are those shown at the company's fiscal year-end.

PROFITS

Profits are shown after taxes and after extraordinary credits or charges if any are shown on the income statement. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profits shown, a double dagger (‡) an extraordinary charge of at least 10%. Figures in parentheses indicate a loss. Profit declines over 100% reflect swings from 1988 profits to 1989 losses. Cooperatives provide only "net margin" figures, which are not comparable with the profits figures in these listings, and therefore N.A. is shown in that column.

STOCKHOLDERS' EQUITY

Stockholders' equity is the sum of capital stock, surplus, and retained earnings at the company's year-end. Redeemable preferred stock is excluded if its redemption is either mandatory or outside the control of the company, except in the case of cooperatives. For purposes of calculating "profits as percent of stockholders' equity" any dividends paid on redeemable preferred stock, if that stock's redemption is either mandatory or outside the control of the company, have been subtracted from profits.

EMPLOYEES

The figure shown is a year-end total except when it is followed by a dagger (†), in which case it is an average.

MARKET VALUE

The figure shown was arrived at by multiplying the number of common shares outstanding (at the latest date available) by the price per common share as of April 20, 1990.

EARNINGS PER SHARE

For all companies the figures shown are the primary earnings per share that appear on the company's income statement. Per share earnings for 1988 and 1979 are adjusted for stock splits and stock dividends. They are not restated for mergers, acquisitions, or accounting changes made after 1979. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profit shown, a double dagger (‡) an extraordinary charge of at least 10%. Results are listed as not available (N.A.) if the companies are cooperatives, joint ventures, or wholly owned subsidiaries of other companies, or if the figures were not published in 1979. The growth rate is the average annual growth, compounded.

TOTAL RETURN TO INVESTORS

Total return to investors includes both price appreciation and dividend yield to an investor in the company's stock. The figures shown assume sales at the end of 1989 of stock owned at the end of 1979 and 1988. It has been assumed that any proceeds from cash dividends, the sale of rights and warrant offerings, and stock received in spinoffs were reinvested when they were paid. Returns are adjusted for stock splits, stock dividends, recapitalizations, and corporate reorganizations as they occur; however, no effort has been made to reflect the cost of brokerage commissions or of taxes. Results are listed as not available (N.A.) if shares are not publicly traded or are traded on only a limited basis. If companies have more than one class of shares outstanding, only the more widely held and actively traded has been considered. Total return percentages shown are the returns received by the hypothetical investor described above. The ten-year figures are annual averages, compounded.

Most of the figures in the FORTUNE Service 500 Directory were prepared by reporters Laurie Kretchmar and John Labate. The figures on market value, per share earnings, and total return to investors were prepared by Claudine Knight and Kathleen Smyth.

INDUSTRY MEDIANS

CHANGES IN SALES[1]

	INCREASES
DIVERSIFIED SERVICE	11.5%
RETAILING	10.0
DIVERSIFIED FINANCIALS	7.5
UTILITIES	5.2
TRANSPORTATION	5.1

CHANGES IN PROFITS

	INCREASES
DIVERSIFIED SERVICE	16.3%
LIFE INSURANCE[3]	14.5
RETAILING	12.6
DIVERSIFIED FINANCIALS	12.5
COMMERCIAL BANKS	6.8
UTILITIES	0.3
	DECREASES
SAVINGS INSTITUTIONS	63.0%
TRANSPORTATION	7.5

TOTAL RETURN TO INVESTORS, 1989[2]

UTILITIES	35.1%
DIVERSIFED FINANCIALS	32.0
RETAILING	29.2
DIVERSIFIED SERVICE	22.8
COMMERCIAL BANKS	19.6
TRANSPORTATION	15.4
SAVINGS INSTITUTIONS	(18.3)
SERVICE 500 MEDIAN	23.0

TOTAL RETURN TO INVESTORS 1979-89 ANNUAL AVERAGE[2]

RETAILING	24.6%
UTILITIES	20.3
COMMERCIAL BANKS	20.3
DIVERSIFED FINANCIALS	18.6
DIVERSIFIED SERVICE	17.9
TRANSPORTATION	16.5
SAVINGS INSTITUTIONS	5.6
SERVICE 500 MEDIAN	19.8

RETURN ON SALES[1]

	1989	1988
UTILITIES	11.1%	11.0%
DIVERSIFIED FINANCIALS	5.2	5.9
DIVERSIFIED SERVICE	2.6	2.2
RETAILING	2.4	2.5
TRANSPORTATION	2.2	3.4
SERVICE 500 MEDIAN	4.1	3.8

RETURN ON ASSETS[2]

	1989	1988
RETAILING	6.1%	5.4%
UTILITIES	4.2	4.2
DIVERSIFIED SERVICE	3.7	4.0
TRANSPORTATION	2.5	3.4
DIVERSIFIED FINANCIALS	1.1	1.2
COMMERCIAL BANKS	0.9	0.9
SAVINGS INSTITUTIONS	(0.3)	0.4
SERVICE 500 MEDIAN	1.1	1.1

RETURN ON STOCKHOLDERS' EQUITY[2]

	1989	1988
RETAILING	15.8%	16.3%
DIVERSIFIED SERVICE	14.5	12.4
COMMERCIAL BANKS	13.3	14.6
DIVERSIFIED FINANCIALS	12.7	12.8
UTILITIES	12.4	12.7
TRANSPORTATION	11.7	11.6
SAVINGS INSTITUTIONS	(2.3)	8.8
SERVICE 500 MEDIAN	12.3	13.0

SALES PER DOLLAR OF STOCKHOLDERS' EQUITY[1]

RETAILING	$5.19
DIVERSIFIED SERVICE	3.89
TRANSPORTATION	3.31
DIVERSIFED FINANCIALS	2.42
UTILITIES	1.16
SERVICE 500 MEDIAN	2.92

SALES PER EMPLOYEE[1]

DIVERSIFED FINANCIALS	$326,786
UTILITIES	282,843
DIVERSIFIED SERVICE	254,765
TRANSPORTATION	127,741
RETAILING	108,656
SERVICE 500 MEDIAN	194,873

[1]Commercial banks, savings institutions, and life insurance companies are not included. [2]Life insurance companies are not included. [3]Net income based on statutory accounting.

ARRIVALS AND DEPARTURES

NEWCOMERS TO THE 500	RANK
BB&T FINANCIAL CORP.	B-100
BORG-WARNER	S-44
BURLINGTON RESOURCES	S-51
COLONIAL PIPELINE	T-40
COMBUSTION ENGINEERING	S-27
COMPUTER ASSOCIATES	S-94
ENSTAR GROUP	I-28
FARMERS UNION	S-75
FED. HOME LOAN MORTGAGE	F-13
FIRST CAPITAL LIFE	L-46
FIRST HAWAIIAN	B-99
GRAND UNION	R-39
GREYHOUND LINES	T-24
INT'L SHIPHOLDING	T-49
INTEGRA FINANCIAL	B-78
JWP	S-55
LEUCADIA NATIONAL	F-48
METROPOLITAN FIN.	I-47
MONARCH LIFE	L-43
OGLETHORPE POWER	U-44
OMNICOM GROUP	S-96
RICHFOOD HOLDINGS	S-86
TURNER BROADCASTING	S-93
TWENTIETH CENTURY FOX FILM	S-98
UNITED ARTISTS ENTERTAIN.	S-88
UNITED PACIFIC LIFE	L-44

RETURNED TO THE 500**	
APPLE BANCORP (1986: I-46)	I-46
ARCO PIPE LINE (1985: T-31)	T-37
BP PIPELINES (ALASKA) (1985: T-24)	T-23
COUNTRYMARK (1987: S-100)	S-100
EXXON PIPELINE (1985: T-29)	T-33
GREAT LAKES BANCORP (1987: I-50)	I-50
PANHANDLE EASTERN (1985: U-43)	U-38
POTOMAC ELECTRIC POWER (1979: U-49)	U-46
SOCIETY FOR SAVINGS (1987: I-45)	I-38
SUPERMARKETS GENERAL (1986: R-16)	R-17
TJX COS. (1987: R-17)	R-47

DISPLACED FROM THE 500	1988 RANK
AIR EXPRESS INTERNATIONAL [1]	T-37
AMERICAN CARRIERS	T-42
AMER. S&L OF FLA. [2]	I-35
APL	S-72
ARROW ELECTRONICS	S-88
ATKINSON (GUY F.)	S-95
CHARTER	S-94
CHEMICAL LEAMAN	T-49
CITYFED FINANCIAL CORP.	I-19
CULBRO	S-93
DAIRYMEN	S-90
EMERY AIR FREIGHT [3]	T-23
FUJI BANK & TRUST CO.	B-96
GENERAL CINEMA	R-43
GIBRALTAR FINANCIAL CORP.	I-10
HARCOURT BRACE JOVAN. [4]	S-47
HARPER GROUP [1]	T-48
HOME LIFE	L-49
HOMESTEAD FINANCIAL CORP.	I-32
INTEGRATED RESOURCES	F-32
LINCOLN NAT'L PENSION [3]	L-27
LORIMAR TELEPICTURES	S-99
MDC HOLDINGS	S-97
MAXICARE HEALTH PLANS	S-49
MCORP	B-38
MONTGOMERY WARD HOLDING [5]	R-19
NASHUA	S-89
NCNB TEXAS NATIONAL BANK	B-26
PACIFIC FIRST FIN. CORP.	I-26
PIONEER HI-BRED INT'L	S-98
SOUTHWESTERN LIFE	L-32
TESORO PETROLEUM [4]	S-80
TEXAS EASTERN [3]	U-44
TIGER INTERNATIONAL [3]	T-22
TONKA	S-96
TRAILER TRAIN [1]	T-38
WESTERN S&L ASS'N	I-33

**Figures in parentheses indicate year and rank the last time the company was listed.
[1]Not classified as Transportation.
[2]Company figures consolidated with Enstar Group.
[3]Acquired by another company on the Service 500.
[4]Reclassified as an Industrial.
[5]Figures are no longer made public.

THE MONEY LOSERS†

	RANK	LOSS
FEDERATED DEPT. STORES	R-23	$1,503.9
SOUTHMARK	I-34	1,460.3*
SOUTHLAND	R-13	1,306.9*
J.P. MORGAN & CO.	B-4	1,275.0
BANK OF NEW ENGLAND CORP.	B-21	1,113.3
BANKERS TRUST N.Y.CORP.	B-10	979.9
ALLIED STORES	R-40	925.2
TEXAS AIR	T-6	885.6*
CHASE MANHATTAN CORP.	B-2	665.0
COLUMBIA S&L ASS'N	I-18	591.1
PINNACLE WEST CAPITAL	U-34	551.4
MANUFACT. HANOVER CORP.	B-8	518.0
CHEMICAL BANKING CORP.	B-6	482.2
ENTERGY	U-15	472.6
PAN AM	T-14	336.6*
TRANS WORLD AIRLINES	T-13	298.5
LOMAS FINANCIAL CORP.	F-35	296.8*
ILLINOIS POWER	U-43	288.4
GREAT AMERICAN BANK	I-7	263.4
TELE-COMMUNICATIONS	U-22	257.0
GOLDOME	I-9	253.0*
MERRILL LYNCH	F-5	213.4
SEAMEN'S CORP.	I-48	212.7
CROSSLAND SAVINGS	I-6	191.7
ATLANTIC FINANCIAL FEDERAL	I-22	161.1
ENSTAR GROUP	I-28	150.7
VALLEY NATIONAL CORP.	B-58	149.2
NAT'L WESTMNST. BANCORP	B-35	139.5
REVCO D.S.	R-41	133.4*
FLA. NAT'L. BANKS OF FLA.	B-68	131.9
SHAWMUT CORP.	B-24	128.9
HOME OWNERS SAVINGS BANK	I-45	127.5
FIRST INTERSTATE BANCORP	B-9	124.5
CENTRUST BANK	I-19	119.5
AMERIFIRST BANK	I-40	117.8
BEVERLY ENTERPRISES	S-48	104.2*
TRUSTCORP	B-95	104.1
UNITED ARTISTS ENTERTAIN.	S-88	103.5
LONG ISLAND LIGHTING	U-28	95.8*
DIME SAVINGS BANK OF N.Y.	I-11	92.3
TJX COS.	R-47	78.3*
SUPERMARKETS GEN. HLDGS.	R-17	76.5*
FLORIDA FED. SAVINGS BANK	I-32	76.4*
COAST SAVINGS FINANCIAL	I-14	74.2
KROGER	R-5	72.7
TURNER BROADCASTING	S-93	70.6
HOWARD SAVINGS BANK	I-30	66.1
USAIR GROUP	T-9	63.2
FINAN. CORP. OF ST. BARBARA	I-35	60.3*
TW SERVICES	R-31	57.3
MERITOR SAVINGS BANK	I-10	55.6*
BEST PRODUCTS	R-50	53.8*
R.H. MACY	R-16	53.7*
HAL	T-46	46.9*
FARWEST FINANCIAL	I-39	46.1
GULF STATES UTILITIES	U-35	45.6
SUBARU OF AMERICA	S-58	42.4*
CHARTER MEDICAL	S-66	36.7*
AMERICAN CAPITAL CORP.	I-29	35.3
LANDMARK LAND	F-44	34.9
SOO LINE	T-38	26.0
VONS COS.	R-21	25.1*
BRANIFF	T-44	24.6*
STOP & SHOP COS.	R-27	23.2*
ANCHOR SAVINGS BANK	I-20	23.1
CHICAGO & N.W. HLDGS.	T-27	20.8
MIDWAY AIRLINES	T-43	20.7
OLD STONE FINANCIAL	I-42	20.7
NATIONAL INTERGROUP	S-32	15.7*
NORTHEAST SAVINGS	I-21	12.9
AMERICAN MEDICAL INT'L	S-38	12.8
ARKANSAS BEST	T-32	12.7*
ALCO HEALTH SERVICES	S-43	11.9
FRANKLIN SAVINGS ASSN.	I-13	9.0
SFFED CORP.	I-49	8.6
PERMIAN PARTNERS	S-41	8.0*
FRED MEYER	R-46	6.8
BALFOUR MACLAINE	S-77	4.5*
DCNY	F-37	1.9*
MAYFLOWER GROUP	T-34	1.8*
RICHFOOD HOLDINGS	S-86	1.4
PRESTON	T-36	.8

†Life insurance companies are not included.
*Also lost money in 1988.

COMPANY	RANK
A	
ACE HARDWARE	S-68
AETNA LIFE	L-4
AETNA LIFE & ANNUITY	L-24
AETNA LIFE & CASUALTY	F-4
AHMANSON (H.F.)	I-1
AIRBORNE FREIGHT	T-28
ALASKA AIR GROUP	T-29
ALBERTSON'S	R-15
ALCO HEALTH SERVICES	S-43
ALCO STANDARD	S-25
ALEXANDER & ALEX. SERV.	F-46
ALEXANDER & BALDWIN	T-30
ALLEGHANY	F-36
ALLEGHENY POWER SYSTEM	U-50
ALLIED STORES	R-40
ALLSTATE LIFE	L-20
AMBASE	F-24
AMERICAN CAPITAL CORP.	I-29
AMERICAN ELECTRIC POWER	U-14
AMERICAN EXPRESS	F-1
AMERICAN FAMILY LIFE	L-42
AMERICAN FINANCIAL	S-8
AMERICAN GENERAL	F-15
AMER. INFORMATION TECH.	U-10
AMERICAN INT'L GROUP	F-9
AMERICAN MEDICAL INT'L	S-38
AMERICAN PRESIDENT	T-20
AMERICAN SAVINGS BANK	I-37
AMERICAN STORES	R-4
AMERICAN TEL. & TEL.	S-1
AMERICA WEST AIRLINES	T-26
AMERIFIRST BANK	I-40
AMERITRUST CORP.	B-55
AMES DEPARTMENT STORES	R-28
AMR	T-2
AMSOUTH BANCORP.	B-64
ANCHOR SAVINGS BANK	I-20
AON	F-32
APPLE BANCORP	I-46
ARA GROUP	S-23
ARCO PIPE LINE	T-37
ARGONAUT GROUP	F-50
ARKANSAS BEST	T-32
ASSOCIATED MILK PROD.	S-34
ATLANTIC FINANCIAL FEDERAL	I-22
AUTOMATIC DATA PROC.	S-62
AVNET	S-52
B	
BALFOUR MACLAINE	S-77
BALLY MANUFACTURING	S-50
BALTIMORE GAS & ELECTRIC	U-39
BANC ONE CORP.	B-26
BANCO POP. DE PUERTO RICO	B-85
BANCORP HAWAII	B-65
BANKAMERICA CORP.	B-3
BANKERS TRUST N.Y. CORP.	B-10
BANK OF BOSTON CORP.	B-15
BANK OF CALIFORNIA	B-69
BANK OF NEW ENGLAND CORP.	B-21
BANK OF NEW YORK CO.	B-11
BANK OF TOKYO TRUST	B-66
BANK SOUTH CORP.	B-97
BARNETT BANKS	B-23
BAYBANKS	B-62
BB&T FINANCIAL CORP.	B-100
BEAR STEARNS COS.	F-11
BELL ATLANTIC	U-3
BELLSOUTH	U-2
BENEFICIAL	F-33
BERGEN BRUNSWIG	S-26
BEST PRODUCTS	R-50
BEVERLY ENTERPRISES	S-48
BINDLEY WESTERN	S-67
BLOUNT	S-76
BOATMEN'S BANCSHARES	B-43
BORG-WARNER	S-44
BP PIPELINES (ALASKA)	T-23
BRANIFF	T-44
BROWNING-FERRIS	S-40
BRUNO'S	R-48
BURLINGTON NORTHERN	T-12
BURLINGTON RESOURCES	S-51
C	
CALFED	I-3
CAPITAL CITIES/ABC	S-17
CAPITAL HOLDING	F-21
CAROLINA FREIGHT	T-35
CAROLINA POWER & LIGHT	U-32
CARTER HAWLEY HALE	R-37
CASTLE & COOKE	S-39
CBI INDUSTRIES	S-70
CBS	S-36
CENTERIOR ENERGY	U-21
CENTEX	S-53
CENTRAL FIDELITY BANKS	B-94
CENTRAL & SOUTH WEST	U-29
CENTRUST BANK	I-19
CHARTER MEDICAL	S-66
CHASE MANHATTAN CORP.	B-2
CHEMICAL BANKING CORP.	B-6
CHICAGO & NORTH WESTERN	T-27
CHUBB	F-27
CIGNA	F-6
CINCINNATI FINANCIAL	F-47
CIRCLE K	R-30
CITADEL HOLDING CORP.	I-33
CITICORP	B-1
CITIZENS SAV. FINAN. CORP.	I-41
CITIZENS & SOUTHERN CORP.	B-33
CMS ENERGY	U-27
COAST SAVINGS FINANCIAL	I-14
COLONIAL PIPELINE	T-40
COLUMBIA GAS SYSTEM	U-40
COLUMBIA PICTURES ENT.	S-63
COLUMBIA S&L ASS'N	I-18
COMBUSTION ENGINEERING	S-27
COMDISCO	S-61
COMERICA	B-49
COMMERCE BANCSHARES	B-87
COMMERCIAL FEDERAL CORP.	I-27
COMMERCIAL METALS	S-78
COMMONWEALTH EDISON	U-11
COMPUTER ASSOCIATES	S-94
COMPUTER SCIENCES	S-79
CONNECTICUT GENERAL LIFE	L-7
CONNECTICUT MUTUAL LIFE	L-19
CONSOL. EDISON OF N.Y.	U-24
CONSOLIDATED FREIGHTWAYS	T-15
CONSOLIDATED NATURAL GAS	U-48
CONSOLIDATED RAIL	T-16
CONTEL	U-41
CONTINENTAL	F-22
CONTINENTAL ASSURANCE	L-28
CONTINENTAL BANK CORP.	B-22
CORESTATES FINAN. CORP.	B-39
COSTCO WHOLESALE	R-34
COUNTRYMARK	S-100
CRESTAR FINANCIAL CORP.	B-54
CROSSLAND SAVINGS	I-8
CSX	T-5
D	
DAYTON HUDSON	R-8
DCNY	F-37
DELTA AIR LINES	T-4
DETROIT EDISON	U-25
DI GIORGIO	S-91
DILLARD DEPT. STORES	R-33
DIME SAVINGS BANK OF N.Y.	I-11
DISNEY (WALT)	S-19
DOMINION BANKSHARES	B-60
DOMINION RESOURCES	U-23
DOWNEY S&L ASS'N	I-43
DUKE POWER	U-26
DUN & BRADSTREET	S-21
E	
ECOLAB	S-81
ELECTRONIC DATA SYSTEMS	S-15
EMPIRE OF AMERICA FED. SAV.	I-16
ENRON	S-4
ENSERCH	S-35
ENSTAR GROUP	I-28
ENTERGY	U-15
EQUITABLE BANCORP.	B-93
EQUITABLE LIFE ASSURANCE	L-3
EQUITABLE VARIABLE LIFE	L-26
EUROPEAN AMER. BANCORP	B-96
EXECUTIVE LIFE	L-16
EXXON PIPELINE	T-33
F	
FARMERS UNION	S-75
FARWEST FINANCIAL	I-39
FEDERAL EXPRESS	T-10
FED. HOME LOAN MORTGAGE	F-13
FED. NAT'L MORTGAGE ASS'N	F-2
FEDERATED DEPT. STORES	R-23
FIFTH THIRD BANCORP	B-74
FIN. CORP. OF SANTA BARBARA	I-35
FIRST ALABAMA BANCSHARES	B-92
FIRST AMER. BANKSHARES	B-52
FIRST AMERICAN CORP.	B-75
FIRSTAR CORP.	B-63
FIRST BANK SYSTEM	B-36
FIRST CAPITAL	L-46
FIRST CHICAGO CORP.	B-13
1ST CITY BANCORP. OF TEXAS	B-44
FIRST EMPIRE STATE CORP.	F-34
FIRSTFED MICHIGAN CORP.	I-12
FIRST FIDELITY BANCORP.	B-20
FIRST FLORIDA BANKS	B-91
FIRST HAWAIIAN	B-99
FIRST INTERSTATE BANCORP	B-9
FIRST MARYLAND BANCORP	B-72
1ST OF AMERICA BANK CORP.	B-45
FIRST PENNSYLVANIA CORP.	B-80
FIRST SECURITY CORP.	B-88
1ST TENNESSEE NAT'L CORP.	B-81
FIRST UNION CORP.	B 17
FIRST VIRGINIA BANKS	B-98
FIRST WACHOVIA CORP.	B-31
FLEET/NORSTAR FINANCIAL	B-16
FLEMING	S-2
FLORIDA FEDERAL SAVINGS	I-32
FLORIDA NAT'L BANKS OF FLA.	B-68
FLORIDA PROGRESS	U-47
FLUOR	S-12
FOOD LION	R-25
FOSTER WHEELER	S-84
FPL GROUP	U-18
FRANKLIN (B.) FED. S&L ASS'N	I-31
FRANKLIN LIFE	L-50
FRANKLIN SAVINGS ASS'N	I-13
FUND AMERICAN	F-26
G	
GEICO	F-39
GENERAL AMERICAN LIFE	L-37
GENERAL PUBLIC UTILITIES	U-36
GENERAL RE	F-30
GENUINE PARTS	S-33
GIANT FOOD	R-35
GLENFED	I-4
GOLDEN WEST FINAN. CORP.	I-5
GOLDOME	I-9
GRAINGER (W.W.)	S-57
GRAND TRUNK	T-45
GRAND UNION	R-39
GREAT AMERICAN BANK	I-7
GREAT ATL. & PACIFIC TEA	R-10
GREAT LAKES BANCORP	I-50
GREAT WESTERN FINAN. CORP.	I-2
GREYHOUND DIAL	S-29
GREYHOUND LINES	T-24
GTE	U-1
GUARDIAN OF AMERICA	L-38
GULF STATES UTILITIES	U-35
H	
HAL	T-46
HALLIBURTON	S-14
HANOVER INSURANCE	F-42
HARDWARE WHOLESALERS	S-95
HARRIS BANKCORP	B-47
HARTFORD LIFE	L-29
HARVEST STATES COOPS.	S-37
HERTZ	S-45
HIBERNIA CORP.	B-79
HILTON HOTELS	S-97
HOLIDAY	S-65
HOME DEPOT	R-38
HOMEFED CORP.	I-6
HOME OWNERS SAVINGS BANK	I-45
HOSPITAL CORP. OF AMERICA	S-22
HOUSEHOLD INTERNATIONAL	F-17
HOUSTON INDUSTRIES	U-20
HOWARD SAVINGS BANK	I-30
HUMANA	S-24
HUNTINGTON BANCSHARES	B-51
HUNT (J.B.) TRANSPORT	T-41
I	
IDS LIFE	L-17
ILLINOIS CENTRAL RAILROAD	T-39
ILLINOIS POWER	U-43
IMPERIAL CORP. OF AMERICA	I-15
INB FINANCIAL CORP.	B-84
INDIANA FARM BUREAU COOP.	S-89

RANK KEY

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U– UTILITIES page 330

COMPANY	RANK
IND. BNK. OF JAPAN TRST. CO.	B-90
INTEGRA FINANCIAL	B-78
INT'L SHIPHOLDING	T-49
INTERPUBLIC GROUP OF COS.	S-85
ITEL	S-49
ITT	F-10
J	
JACKSON NATIONAL LIFE	L-30
JOHN HANCOCK MUTUAL LIFE	L-9
JWP	S-55
K	
KANSAS CITY SO. IND.	T-42
KELLY SERVICES	S-73
KEMPER	F-25
KEMPER INVESTORS LIFE	L-40
KEYCORP	B-41
KEYSTONE PROVIDENT LIFE	L-34
K MART	R-2
KROGER	R-5
L	
LANDMARK LAND	F-44
LEUCADIA NATIONAL	F-48
LIMITED	R-26
LINCOLN NATIONAL	F-18
LINCOLN NATIONAL LIFE	L-15
LOEWS	F-14
LOMAS FINANCIAL	F-35
LONG ISLAND LIGHTING	U-28
LONGS DRUG STORES	R-49
LOWE'S COMPANIES	R-43
M	
MACY (R.H.)	R-16
MANUF. HANOVER CORP.	B-8
MANUF. NATIONAL CORP.	B-59
MARINE MIDLAND BANKS	B-25
MARRIOTT	S-5
MARSHALL & ILSLEY CORP.	B-73
MARSH & MCLENNAN	F-49
MASS. MUTUAL LIFE	L-11
MAY DEPARTMENT STORES	R-9
MAYFLOWER	T-34
MCA	S-31
MCDONALD'S	R-18
MCI COMMUNICATIONS	S-11
MCKESSON	S-7
MELLON BANK CORP.	B-18
MELVILLE	R-14
MERCANTILE BANCORP.	B-76
MERCANTILE STORES	R-45
MERCHANTS NATIONAL CORP.	B-89
MERIDIAN BANCORP	B-50
MERITOR SAVINGS BANK	I-10
MERRILL LYNCH	F-5
METROPOLITAN FINANCIAL	I-47
METROPOLITAN LIFE	L-2
MEYER (FRED)	R-46
MICHIGAN NATIONAL CORP.	B-53
MIDLAND ENTERPRISES	T-50
MIDLANTIC CORP.	B-32
MIDWAY AIRLINES	T-43
MINNESOTA MUTUAL LIFE	L-45
MNC FINANCIAL	B-37
MONARCH LIFE	L-43
MORGAN (J.P.) & CO.	B-4
MORGAN STANLEY GROUP	F-8
MORRISON KNUDSEN	S-47
MUTUAL BENEFIT LIFE	L-18
MUTUAL OF AMERICA LIFE	L-48
MUTUAL OF NEW YORK	L-13
N	
NASH FINCH	S-46
NATIONAL CITY CORP.	B-34
NATIONAL INTERGROUP	S-32
NAT'L MEDICAL ENTERPRISES	S-28
NAT'L WESTMIN. BANCORP	B-35
NATIONWIDE LIFE	L-23
NBD BANCORP	B-27
NCNB CORP.	B-7
NEW ENGLAND MUTUAL LIFE	L-14
NEW YORK LIFE	L-6
NEW YORK LIFE & ANNUITY	L-25
N.Y. STATE ELECTRIC & GAS	U-45
NIAGARA MOHAWK POWER	U-33
NIKE	S-59
NORDSTROM	R-42
NORFOLK SOUTHERN	T-11
NORTHEAST SAVINGS	I-21
NORTHEAST UTILITIES	U-37
NORTHERN STATES POWER	U-49
NORTHERN TRUST CORP.	B-56
NORTHWESTERN MUTUAL LIFE	L-10
NORTHWESTERN NAT'L LIFE	L-41
NORWEST CORP.	B-30
NVR LP	S-83
NWA	T-8
NYNEX	U-4
O	
OGDEN	S-74
OGLETHORPE POWER	U-44
OHIO CASUALTY	F-40
OHIO EDISON	U-30
OLD KENT FINANCIAL CORP.	B-67
OLD REPUBLIC INT'L	F-41
OLD STONE FINANCIAL	I-42
OMNICOM GROUP	S-96
OVERSEAS SHIPHOLDING GRP.	T-47
P	
PACIFIC ENTERPRISES	S-10
PACIFIC GAS & ELECTRIC	U-6
PACIFIC MUTUAL LIFE	L-27
PACIFICORP	U-19
PACIFIC TELESIS GROUP	U-7
PAINE WEBBER GROUP	F-19
PAN AM	T-14
PANHANDLE EASTERN	U-38
PARAMOUNT COMM.	S-13
PENNEY (J.C.)	R-6
PENN MUTUAL LIFE	L-39
PENN. POWER & LIGHT	U-31
PEOPLE'S BANK	I-23
PERMIAN PARTNERS	S-41
PERPETUAL FINANCIAL CORP.	I-25
PHH	S-56
PHILADELPHIA ELECTRIC	U-17
PHM	S-90
PHOENIX MUTUAL LIFE	L-35
PINNACLE WEST	U-34
PITTSTON	T-22
PNC FINANCIAL CORP.	B-14
POTOMAC ELECTRIC POWER	U-46
PRESTON	T-36
PRICE	R-22
PRIMERICA CORP.	F-20
PRINCIPAL MUTUAL LIFE	L-12
PROGRESSIVE	F-45
PROVIDENT NAT'L ASSURANCE	L-32
PRUDENTIAL OF AMERICA	L-1
PUBLIC SERVICE ENT. GROUP	U-16
PUBLIX SUPER MARKETS	R-20
R	
REEBOK INTERNATIONAL	S-54
RELIANCE GROUP HOLDINGS	F-29
REPUBLIC NEW YORK CORP.	B-28
REVCO D.S.	R-41
RICHFOOD HOLDINGS	S-86
RIGGS NATIONAL CORP.	B-71
RITE AID	R-36
ROADWAY SERVICES	T-18
ROCHESTER COMMUNITY SAV.	I-44
ROUNDY'S	S-42
RYDER SYSTEM	S-16
RYKOFF-SEXTON	S-82
RYLAND GROUP	S-72
S	
SAFECO	F-31
SAFEWAY STORES	R-7
SALOMON	F-3
SANTA FE PACIFIC	T-17
SANWA BANK CALIFORNIA	B-77
SCECORP	U-13
SCHWAB (CHARLES)	F-38
SEAMEN'S CORP.	I-48
SEARS ROEBUCK	R-1
SECURITY PACIFIC CORP.	B-5
SERVICEMASTER	S-64
SERVICE MERCHANDISE	R-32
SERVISTAR	S-92
SFFED CORP.	I-49
SHAWMUT NATIONAL CORP.	B-24
SIGNET BANKING CORP.	B-46
SOCIETY CORP.	B-57
SOCIETY FOR SAVINGS	I-38
SOO LINE	T-38
SOUTH CAROLINA NAT'L CORP.	B-82
SOUTHEAST BANKING CORP.	B-40
SOUTHERN	U-9
SOUTHERN PACIFIC TRANS.	T-19
SOUTHLAND	R-13
SOUTHMARK	I-34
SOUTHTRUST CORP.	B-70
SOUTHWEST AIRLINES	T-25
SOUTHWESTERN BELL	U-8
SOVRAN FINANCIAL CORP.	B-29
STANDARD FEDERAL BANK	I-17
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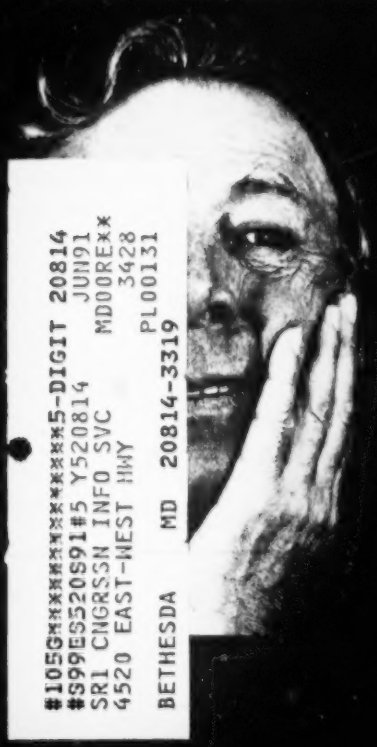
CEO PAY SWEEPSTAKES • WHY BILL GATES KEEPS WINNING • AIRPORT SNARLS

UNE 18, 1990 $3.95

FORTUNE

THE BIGGEST LOONIEST DEAL EVER



How the wacky Robert Campeau and his fee-hungry bankers concocted a huge takeover that promptly went bust. The repercussions clobbered businesses far and wide, and are still going on ... and on ... and on ...

by Carol J. Loomis

JUNE 18, 1990

VOL. 121, NO. 14

FORTUNE

ABOVE: Robert Campeau and his wife, Ilse, at their home in Toronto, photographed by Peter Sibbald.

COVER: Alex Quesada (Matrix) photographed Campeau at the Waldorf-Astoria Hotel in New York City in 1988.

"One man, one company. They simply managed to throw a whole industry into turmoil."

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MONEY & MARKETS/Cover Story

THE BIGGEST LOONIEST DEAL EVER 48

It brought the excessive Eighties to an absurdly fitting end. Robert Campeau's history of nervous breakdowns and volatile behavior was well known to the lenders who financed his ill-conceived takeover binge—one resulting in a financial megabomb that was barely built before it was detonated by a business that *had* to deliver and didn't. So why did the lenders give him all that money? *by Carol J. Loomis*

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Aiming to refashion the furniture industry, Masco saw its earnings drop. But its style of friendly acquisition may suit the Nineties. *by Ronald Henkoff*

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Family-run NCH has every reason to boast about its maintenance businesses. *by Ret Autry*

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Had a terrific year? You could earn a mint—or a pittance. Top bosses often aren't paid according to performance. Startling new evidence says maybe that doesn't make a difference. *by Graef S. Crystal*

"The pressure to pay off the debt tends to put a firecracker under management."

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"We had to look at our businesses and ask ourselves whether they might be worth more to somebody else."

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"He's very action oriented and believes it's better to make a decision and correct it later than not to make a decision."

PAGE 82

"Living near an airport is like being married to a very wealthy person who snores."

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"I did not drive around in a Rolls pointing my finger at houses. I keep all three of my Rollses in Japan."

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"Our assets tend to be an eight on the Richter scale."

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LOOKING AHEAD

AIRPORT 2000—A HORROR STORY? 104

You know all about delayed flights, gridlocked runways, crowded terminals. You haven't seen anything yet. Airports have not kept pace with passenger volume and will have a hard time catching up. Only a burst of building on a grand scale can head off more trouble. *by Kenneth Labich*

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Thousands of Japanese are longing for the kind of wide-open spaces they cannot get at home. And as long as land in Tokyo costs $160 a square inch—$17,000 for a piece as big as this page—real estate investors will keep buying in the U.S., where everything looks cheap. *by Susan Moffat*

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Eastman Kodak's new motion analyzer, reverse-dictionary software, the perfect gift for Father's Day, and more. *by Frederick H. Katayama*

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A FORTUNE survey of the nation's top bosses shows that the Ivies and Big Ten schools rank high—and that the Ivy League's dominance is, if anything, increasing. But wait! Little Johnny or Janie may want to consider Washington & Lee or Davidson. *by Susan Caminiti*

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Stop biting your nails. Some industries are hurting, but the expansion continues overall, and the business mood is undaunted. *by Vivian Brownstein*

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Stocks, bonds, or cash? FORTUNE provides the latest answers to the basic question of asset allocation. *by Andrew Evan Serwer*

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A pizza pasha plans a cathedral, Christie Hefner dresses up her stock, Honda's new boss has fun with cars, and more. *by Mark M. Colodny*

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How good bosses take steps to make sure they hear more than just what their sycophantic underlings think they want to hear. *by Walter Kiechel III*

KEEPING UP 133

Waiting for Mr. Right, Princess Charming at Price Waterhouse, and more. *by Daniel Seligman*

LETTERS TO FORTUNE

VIRTUE AND DREXEL BURNHAM'S FALL

In all the discussions about the collapse of Drexel Burnham Lambert and the fall of Ivan Boesky, Dennis Levine, Michael Milken, and others ("Oh, How They Toppled on Wall Street," May 21), what seems to be overlooked is that it was one person writing an anonymous letter from Venezuela that triggered the whole insider trading investigation.

The letter could easily have been filed in the wastebasket by a secretary or officer at Merrill Lynch, which I believe has not been given enough credit for realizing the significance of the letter and turning it over to the SEC. It makes one realize that a single person can and does make a difference in our world.

CHARLES F. YARHAM
President
Industrial Handling
Cleveland

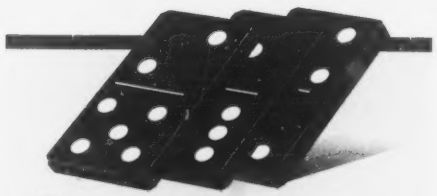
Dennis Levine's "Inside Story of an Inside Trader" reminded me of an incident my grandfather told me about years ago. During the 1930s he was working as an electrician at a gold mine in northern Ontario when he was offered a part in a stock scam if he would arrange a power failure once the drill team hit a gold pocket. He refused and was fired shortly afterward, when he tried to expose the scheme. (Another electrician did cause the failure.) He was poor all his life, and I asked him why he didn't cooperate—after all, the result was the same, except that someone else got rich. He never really answered me, but over the years I've come to understand why. My grandfather was a very proud man, and he was proudest not of what he owned, but of who he was. At the risk of sounding self-righteous, I think he would have believed that at $12 million, Dennis Levine sold his integrity very cheaply indeed.

ANDREW PATTERSON
London, Ontario

Mr. Levine states that when he heard Avon was considering purchase offers for Tiffany, he called me, initiating the idea of the management buyout we accomplished in 1984. But long before I had the misfortune of meeting Dennis Levine, I was on record as committed to leading the buyout.

It is true that Levine later contacted me and arranged for me to meet an important financial partner in the transaction. After a few weeks of discussions, the financial partner and I became so disenchanted with Levine's conduct that we asked his firm, Shearson Lehman, to replace him on the assignment, and another investment banker helped us complete the acquisition.

WILLIAM R. CHANEY
Chairman of the Board
Tiffany & Co.
New York City



"One person writing an anonymous letter triggered the whole insider trading investigation."

Dennis Levine replies: "When I called to propose the leveraged buyout, Mr. Chaney was already considering the option; I never meant to imply otherwise. But no one ordered me off the deal."

The three young men identified in the photo on the second page of "The Last Days of Drexel Burnham" as "Drexel's well-paid youngsters" are in fact compliance department auditors employed by the New York Mercantile Exchange. They were removing records from Drexel's offices as part of the exchange's regulatory oversight of the transfer of accounts and liquidation of house positions.

NEAL L. WOLKOFF
Senior Vice President
Regulatory Affairs and Operations
New York Mercantile Exchange
New York City

FORTUNE *regrets the error.*

POPULATION BOMB STILL TICKING?

Julian Simon's review of Paul and Anne Ehrlich's new book, *The Population Explosion* (Books & Ideas, May 21), misses the point. Of course he is right that technological development, driven by capitalism, has boosted welfare per capita over a much longer period of population increase than Malthus and other gloomy forecasters have predicted.

But Simon argues that human welfare will continue to improve as a result of desirable population growth accompanied by even faster technological development. Alas, it is not so simple. In a finite world system, subject to the laws of physics, two variables (population and per capita welfare) can't both be maximized forever.

The best we can hope for, relying on Simon's approach, is a "benign demographic transition," in which the world's population will rise along with the increase in per capita welfare until countries such as India are roughly as rich per capita as modern Germany. At this point, like Germany, these once-poor countries will develop population stasis. And through this whole process, some technology now unknown will solve all the problems of pollution, erosion, etc.

No one contemplating the prospective environmental burden described by the Ehrlichs can be confident that such a "benign demographic transition" will occur or that population-growth-driven conditions won't be ghastly in 100 years or less. For one thing, the technological development that is necessary to permit a peacetime population increase will also make weapons both more effective and more generally available in a more crowded world.

CHARLES T. MUNGER
Vice Chairman of the Board
Berkshire Hathaway
Los Angeles

CORRECTION

A table accompanying the story "Junk's Bad Times Are Just Starting" (June 4) incorrectly presented information drawn from Conning & Co., a research firm specializing in the insurance industry, about the junk bond holdings of life insurers. The table was titled "Junk Losses of the Biggest Insurers." In fact it listed only three of the 25 largest insurance companies. Many of the insurers not listed have substantial junk bond holdings, some of them larger than the holdings of many of the companies listed.

The figures for the market value of junk bonds held as of December 31, 1989, were actually Conning's values for all bonds. The two columns of figures in the table pertaining to the decline in the value of junk bond holdings actually represented the reported decline in the value of all bonds. FORTUNE *regrets the error.*

The correct figures for the junk bond holdings of the companies in the original table, as carried on the books of those companies, are as follows:

INSURANCE COMPANY	TOTAL JUNK HOLDINGS $ millions*
EQUITABLE LIFE	$2,078.5
EXECUTIVE LIFE CALIFORNIA	$6,459.5
JACKSON NATIONAL	$1,093.4
TRANSAMERICA LIFE	$136.6
KEYSTONE PROVIDENT	$320.3
AID ASSN. FOR LUTHERANS	$78.1
AMERICAN FAMILY	$6.0
NEW ENGLAND MUTUAL	$424.1
PACIFIC MUTUAL	$286.7
EQUITABLE VARIABLE	$460.7
LUTHERAN BROTHERHOOD	$302.4
KEMPER INVESTORS	$627.8
PENN MUTUAL	$114.9
MINNESOTA MUTUAL	$113.1
GENERAL AMERICAN	$115.1
SOUTHWESTERN LIFE	$261.6

*At 12/31/89

SOURCE: CONNING & CO.

Address letters to FORTUNE, Time & Life Building, Rockefeller Center, New York, N.Y. 10020. Letters may be edited for purposes of clarity or space.

THE GREAT CEO PAY SWEEPSTAKES

Had a terrific year? You could earn a mint—or a pittance. Top bosses often aren't paid according to performance. Startling new evidence says that might not matter.

■ *by Graef S. Crystal*

TOP PAY, TOP PERFORMANCE

DAVID STOCK, OMNI

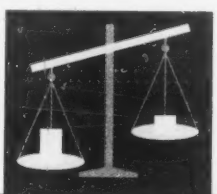
Disney's Eisner

JOHN P. ROSS

A&P's Wood

IF YOU THINK American CEOs are overpaid, you'll find this latest news depressing: They're making more than ever, and the connection between their pay and performance is weakening.

These are among the results of FORTUNE's third annual survey of CEO compensation. The study examines CEO pay at 200 major companies drawn primarily from the largest enterprises on the FORTUNE Industrial 500 and Service 500 lists. As in previous studies, foreign-owned companies and companies at which the CEO has not served an entire fiscal year in that position have been excluded. Also as in the past, a standard computer program for performing the statistical technique known as multiple regression analysis has calculated how much each CEO would have received had he been paid according to the prevailing standards of the whole group. The program figures the average weights these companies as a group assign to such factors as company size, industry, long-term performance, business risk, and CEO tenure in determining the CEO's compensation. Then it assigns these average weights to each CEO individually in order to arrive at what is called the computer-model pay.



In CEO pay, as in so much else, history is accelerating. It was just over a decade ago that compensation professionals manned the observation towers and began a watch for the first CEO to cross the magic $1-million-per-year line. Their labors were soon rewarded: First a trickle and then a torrent of CEOs entered the seven-digit club. In the mid-1980s a new watch began for the first $2 million man. Now we are dealing not with $3 million men or even $5 million men. We are dealing with $10 million men, and not just one but—count 'em—seven.

In this select group the lowest-paid, if that term can be used at all, is Anthony O'Reilly of H.J. Heinz, who earned $10.4 million last year. The highest-paid, Michael Eisner of Walt Disney, earned $35.4 million. Maybe we Americans can't make a competitively priced TV or VCR any longer, and maybe our cars are losing market share to imports, but when it comes to paying CEOs, the rest of the world had just better get out of our way.

The average pay of all 200 CEOs is an eye-popping $2.8 million, not counting perquisites and such fringe benefits as pensions and insurance. But talk of averages doesn't begin to reflect the status of the $10 million men, who are in a class by themselves. They collectively earned $104 million more last year than their computer-model pay—what they would have received if paid according to the prevailing standards of the group. If their pay had been excluded from the model, the average pay of the remaining 193 CEOs would have dropped by 20%—from $2.8 million to $2.3 million.

How to calculate CEO pay? We start with salary and bonus—that's the easy part. We then consider the value of any grants of restricted stock—shares the executive receives free but may not sell during a restriction period, typically five years—and payouts under other incentive plans. If a CEO receives stock options, we assign them a value at the time of grant. Why not wait until he exercises them and takes his gain, when the precise value can be determined? Because many CEOs don't realize option gains until after retirement, so the gains are never reported. To assign options a value, we use the highly regarded

CEOs who most exceeded the computer model's pay . . .

	CEO	COMPANY	PERFORMANCE IQ **	COMPENSATION in thousands ACTUAL	MODEL	PERCENT HIGHER
1	James Wood	A&P *	105	$28,160	$3,240	769%
2	Paul B. Fireman	REEBOK INTERNATIONAL	100	$14,610	$1,770	725%
3	Martin S. Davis	PARAMOUNT	102	$17,160	$2,250	663%
4	Michael D. Eisner	WALT DISNEY	114	$35,410	$7,280	386%
5	Richard K. Eamer	NAT'L MEDICAL ENT.	99	$13,840	$3,600	284%
6	Roberto C. Goizueta	COCA-COLA	108	$10,640	$3,220	230%
7	Alan C. Greenberg	BEAR STEARNS	99	$4,530	$1,540	194%
8	S. Parker Gilbert	MORGAN STANLEY	108	$7,170	$2,930	145%
9	Richard L. Gelb	BRISTOL-MYERS SQUIBB	105	$6,590	$2,770	138%
10	Anthony J. O'Reilly	H.J. HEINZ	106	$10,360	$4,420	134%

*For fiscal year ended 2/28/89. **Elements of Performance IQ: total return to investors during CEO's tenure, ten-year trend in total return, five-year average ratio of stock price to book value, five-year growth of sales and assets, five-year volatility of sales and asset growth, five-year average return on equity, five-year trend in return on equity.

GRAEF S. CRYSTAL *was for 20 years one of America's leading compensation consultants. He edits the* Crystal Report on Executive Compensation *and is a professor at the Haas School of Business at the University of California at Berkeley.*

LOW PAY, TOP PERFORMANCE

BOB KOMSTADIUS

Wal-Mart Stores CEO David Glass

Black-Scholes option pricing model.

A CEO receives salary and bonus every year, but the other forms of compensation may occur less often, so counting their entire value in a single year could be unfair. We therefore spread their value over three years, including one-third in this year's pay figure, one-third next year, and one-third the year after that.

Are the biggest earners worth what they get? In a few cases, company performance has been so excellent that shareholders might feel it was bad taste even to bring up the subject of excessive pay. Examples: Disney under Eisner and Apple under John Sculley. But in a disheartening number of other cases, no claim to superior corporate performance supports the CEOs' exceedingly high pay. Examples: National Medical Enterprises under Richard Eamer and Salomon under John Gutfreund.

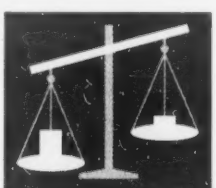
CEO pay is not entirely senseless. The computer program that calculates the prevailing compensation standards of the group also reveals which factors do and don't influence pay levels. For example, company size has an effect. A 10% increase in size—measured by a combination of sales, assets, and number of employees—brings an average 2% increase in pay.

LONG-TERM company performance is another influence. This study summarizes it in a compound rating called Performance IQ, which comprises three stock-market-related measures and six accounting measures (see footnote for details). The average Performance IQ for the group is 100, and a ten-point rise in Performance IQ earns a 24% increase in pay. Riskier companies pay more: When Beta, the widely used measure of stock price volatility, rises from 1 to 1.1, CEO pay tends to rise 4%.

All that makes sense. Other influences don't. For example, tenure with the company turns out to be a *negative* influence. On average, an extra five years of service with a company (not necessarily as CEO) means earning 6% less. And if your company is based in Manhattan, you can expect—all other things being equal—to earn 33% more than if it isn't. Yet the Manhattan-based companies in the study performed no better than the others.

Still other factors that you might expect to figure importantly in CEO pay do not. For the first time, this year's study failed to uncover any significant pay differentials among industries. Even the power utilities, heretofore the lowest-paying of all industry groups, pay no less and no more than other industries after you account for size, overall performance, and other factors.

All these influences—company size, performance, business risk, and the others—together account for 45% of the variation in CEO pay. What does that say about the remaining 55% of pay variation? It says, unhappily, that this remaining variation has nothing whatever to do with these many factors. In other words, it says that the market for CEO services is chaotic.

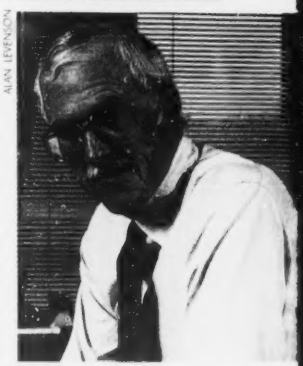


It may be getting even more so. Scarcely anyone would dispute that company performance ought to be a major factor, if not the major factor, in setting CEO pay. Yet the link between the two seems to be weakening. Two years ago in this study a ten-point increase in Performance IQ was good for a 31% rise in pay. Last year the percentage dropped to 26%, and this year, as noted, it is 24%. More unsettling, the primary reason for linking pay and performance—namely, that this will motivate the CEO to perform better—may be invalid (see box, page 102). Even if it is, of course, there remains the secondary reason, which is that paying more for better performance is simply fair and just—as long as the company also lowers pay for poor performance.

Other trends and notable events that emerge from a close reading of 200 proxies:

■ A few companies really do seem to play the pay game fairly. Lee Iacocca and his top executives at Chrysler took no bonus last year—an isolated compensation event among the Big Three automakers, all of which suffered significant profit declines. After a bad year, three top officers of Eastman Kodak had their bonuses reduced by a total $1.1 million. And the top executives of Itel receive stock options that feature a 5% annual increase in the strike price (what the executive must pay to ex-

TOP PAY, AVERAGE PERFORMANCE


ALAN LEVENSON

Eamer of National Medical Enterprises

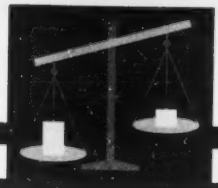
Tables below and on subsequent pages show what 200 CEOs made last year and what they would have made if each company had followed the group's average pay practices, as described in the text. Companies that pay far more or less than the norms may have good reasons: A CEO may deserve a reward for saving the company, or he may own so much stock that he doesn't need much salary. But frequently no reason is apparent.

. . . and those who lagged furthest behind

	CEO	COMPANY	PERFORMANCE IQ	COMPENSATION in thousands ACTUAL	MODEL	PERCENT LOWER
191	Michael W. Wright	SUPER VALU STORES *	101	$1,160	$3,230	-64%
192	M. Anthony Burns	RYDER SYSTEM	98	$1,410	$4,010	-65%
193	Leon Hess	AMERADA HESS	94	$300	$930	-68%
194	George M.C. Fisher	MOTOROLA	98	$1,180	$3,680	-68%
195	A. Dano Davis	WINN-DIXIE STORES	102	$530	$1,660	-68%
196	James T. Lynn	AETNA LIFE & CASUALTY	98	$1,450	$4,590	-68%
197	James C. Cotting	NAVISTAR INTERNATIONAL	94	$590	$1,900	-69%
198	Lew R. Wasserman	MCA	101	$560	$2,280	-75%
199	David D. Glass	WAL-MART STORES †	109	$840	$3,490	-76%
200	Harold B. Finch Jr.	NASH-FINCH	102	$380	$1,720	-78%

*For fiscal year ended 2/28/89. †For fiscal year ended 1/31/89.

REPORTER ASSOCIATE *Antony Michels*



ercise the option). Since the managers could increase the shareholders' wealth by at least 5% just by investing in a passbook savings account, it seems fair that they should have to beat that return before making money on options.

■ Restricted stock—the nearest thing in the executive suite to union featherbedding—continues its rapid spread. In my 1988 study only 26 CEOs received a restricted stock grant during the previous year. The figure has now climbed to 42. Indeed, 58 of 110 CEOs who have been in the study for the past three years have received a grant at some time during that period.

■ Companies are increasingly paying

Isn't someone missing?

Answer: Yes. Steven J. Ross, co-CEO of Time Warner (parent of FORTUNE's publisher), is not included in this survey. Under rules we set more than two years ago, we exclude companies that got a new CEO during the year under study, and Ross became co-CEO of Time Warner last year when Time Inc. began its acquisition of Ross's Warner Communications.

But writing an article on executive compensation without mentioning Ross would be like writing an article on baseball's greatest heroes and omitting Babe Ruth. So here's where he stands. Ross received $4.8 million in salary and bonus in 1989. He also got an equity unit payout of $17.7 million, which, like all such awards in this survey, is spread over three years; so $5.9 million is included here. And he received long-term stock incentives valued at $52 million on January 1, 1987. That sum is also spread over three years, of which 1989 was the third year; so one-third of the amount, or $17.3 million, is counted toward 1989 pay. Total: $28 million.

That is some $7 million less than Disney's Eisner, who ranks first in pay among the CEOs studied, and about the same as what A&P's James Wood received. Note also that on January 10, 1990, Ross received a mammoth stock option grant of 1,800,000 shares at a strike price of $150 a share (well above the market price then or now). That will increase his pay in next year's survey. And Ross's performance? Too early to say at Time Warner. But while he was at Warner, its total return to shareholders over the past 17 years averaged a standout 23% annually.

LOUIS PSIHOYOS—MATRIX

Time Warner's Ross

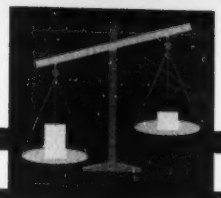
CEOs who exceeded the computer model's pay

	CEO	COMPANY	PERFORMANCE IQ	COMPENSATION in thousands ACTUAL	MODEL	PERCENT HIGHER
11	Rand V. Araskog	ITT	94	$6,410	$3,170	102%
12	Gerald Grinstein	BURLINGTON NORTHERN	100	$3,310	$1,700	95%
13	J. Peter Grace	W.R. GRACE	96	$4,500	$2,470	82%
14	Reuben Mark	COLGATE-PALMOLIVE	104	$6,190	$3,410	82%
15	Stephen M. Wolf	UAL	109	$8,770	$4,890	79%
16	John H. Gutfreund	SALOMON	88	$5,190	$2,920	78%
17	Winton M. Blount	BLOUNT *	95	$1,560	$900	73%
18	John Sculley	APPLE COMPUTER	111	$6,070	$3,600	69%
19	William D. Ruckelshaus	BROWNING-FERRIS	107	$5,590	$3,390	65%
20	Robert L. Crandall	AMR	96	$5,440	$3,660	49%
21	Vernon R. Loucks Jr.	BAXTER INT'L	96	$3,240	$2,180	49%
22	T. Marshall Hahn Jr.	GEORGIA-PACIFIC	101	$5,280	$3,800	39%
23	Robert E. Mullane	BALLY MFG.	95	$3,990	$2,940	36%
24	William M. Agee	MORRISON KNUDSEN	92	$1,990	$1,470	35%
25	James W. Kinnear	TEXACO	98	$3,260	$2,460	33%
26	James J. Renier	HONEYWELL	94	$2,450	$1,870	31%
27	Charles S. Sanford Jr.	BANKERS TRUST N.Y.	92	$3,700	$2,850	30%
28	David S. Tappan Jr.	FLUOR	93	$2,690	$2,080	29%
29	Armand Hammer	OCCIDENTAL PETROLEUM	96	$3,480	$2,750	27%
30	Andrew C. Sigler	CHAMPION INT'L	96	$3,110	$2,600	20%
31	John W. Teets	GREYHOUND	97	$2,990	$2,570	16%
32	B. F. Dolan	TEXTRON	100	$3,480	$3,040	14%
33	William P. Stiritz	RALSTON PURINA	109	$3,990	$3,490	14%
34	Robert Cizik	COOPER INDUSTRIES	101	$1,880	$1,650	14%
35	Edward L. Hennessy Jr.	ALLIED-SIGNAL	94	$3,690	$3,300	12%
36	John A. Georges	INT'L PAPER	102	$4,620	$4,180	11%
37	Zane E. Barnes	SOUTHWESTERN BELL	99	$3,400	$3,080	10%
38	Frederick W. Smith	FEDERAL EXPRESS	100	$2,570	$2,330	10%
39	James R. Stover	EATON	98	$1,420	$1,290	10%
40	Howard M. Love	NATIONAL INTERGROUP	88	$2,100	$1,910	10%
41	John F. Welch Jr.	GENERAL ELECTRIC	102	$5,990	$5,470	10%
42	P. Roy Vagelos	MERCK	116	$5,740	$5,280	9%
43	Lodwrick M. Cook	ATLANTIC RICHFIELD	102	$3,150	$2,930	8%
44	Robert E. Allen	AT&T	101	$2,330	$2,170	7%
45	Allen E. Murray	MOBIL	100	$3,460	$3,250	6%
46	Orion L. Hoch	LITTON INDUSTRIES	96	$2,090	$2,030	3%
47	William A. Schreyer	MERRILL LYNCH	91	$3,500	$3,430	2%
48	James R. Harvey	TRANSAMERICA	98	$1,840	$1,810	2%
49	Allen Born	AMAX	97	$1,930	$1,920	1%
50	August A. Busch III	ANHEUSER-BUSCH	106	$4,120	$4,100	0%
51	Carl E. Reichardt	WELLS FARGO	105	$2,470	$2,460	0%
52	J. L. Ketelsen	TENNECO	98	$2,660	$2,650	0%

CEOs who trailed the computer model's pay

						PERCENT LOWER
53	Barry F. Sullivan	FIRST CHICAGO	98	$2,040	$2,050	0%
54	H. B. Atwater Jr.	GENERAL MILLS	108	$3,220	$3,290	-2%
55	John F. Akers	IBM	96	$4,530	$4,650	-3%
56	Thomas G. Plaskett	PAN AM	90	$1,740	$1,790	-3%
57	Robert McClements Jr.	SUN	90	$1,280	$1,340	-4%
58	Robert A. Schoellhorn	ABBOTT LABS	108	$3,730	$3,910	-5%
59	Edwin I. Colodny	USAIR	95	$1,390	$1,490	-7%

*For fiscal year ended 2/28/89.



part of top executives' personal income taxes—regardless of where tax rates go. Morrison Knudsen "grosses up" the pay of executives for the tax on perks, such as personal use of the company aircraft. Bally, Georgia-Pacific, and Coca-Cola, among other companies, assume all or a hefty portion of the taxes that executives must pay whenever restrictions lapse on their restricted stock grants.

■ Merrill Lynch CEO William Schreyer earned $52,900 last year from Merrill-sponsored limited partnerships in which he had invested only $100,000. Nothing at all wrong with that. In fact, in light of Merrill's stock's performance—from a high of $36 last year it has dropped to around $23—maybe Schreyer should have put some of the shareholders' money into those partnerships.

■ Option swapping hasn't died. It

The 1990 Proxy Obfuscation Award

Maybe the directors of Southwestern Bell ought to consider diversifying into the cemetery business, because they sure are good at burying things. The winner of the 1990 Proxy Obfuscation Award managed to give retiring CEO Zane E. Barnes some $2.5 million of stock and not report the gift at all.

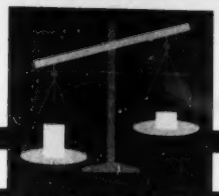
Barnes and other senior executives of Southwestern Bell participate in a plan that awards them shares based on the company's performance during three-year periods. A new three-year period starts each year. The company's latest proxy fully reports Barnes's award of 14,337 shares for the 1986–88 period. But when Barnes retired at the end of 1989, he also received full share payouts for the 1987–89 period and for two periods that are not yet over, 1988–90 and 1989–91. The proxy made no mention of these payouts, which totaled about 45,000 shares, recently worth around $52 each. The only trace was the near-doubling of Barnes's reported shareholdings in a single year. Could it be that another CEO was emulating Citicorp chief John Reed, whose shareholdings abruptly rose late in 1988 as he implemented the totally novel idea of using his own money to buy his company's stock? No. A call to Southwestern Bell revealed what had happened.

Citicorp deserves praise for the huge strides it has made in proxy disclosure. Winner of our 1988 Proxy Obfuscation Award for strewing Reed's pay information across some 20 pages of numbing text, the company measurably improved last year and this year has produced the clearest proxy reporting of compensation that we have ever seen. Bell Atlantic, winner of our 1989 award, has also made significant improvement.

CEOs who trailed the computer model's pay

	CEO	COMPANY	PERFORMANCE IQ	COMPENSATION in thousands ACTUAL	MODEL	PERCENT LOWER
60	Charles M. Harper	CONAGRA	105	$3,690	$3,970	-7%
61	John A. Young	HEWLETT-PACKARD	100	$3,620	$3,900	-7%
62	John C. Marous	WESTINGHOUSE ELECTRIC	99	$2,420	$2,620	-8%
63	Charles W. Moritz	DUN & BRADSTREET	103	$2,720	$2,950	-8%
64	Arnold B. McKinnon	NORFOLK SOUTHERN	98	$1,330	$1,460	-9%
65	Drew Lewis	UNION PACIFIC	98	$3,230	$3,590	-10%
66	Walter V. Shipley	CHEMICAL BANKING	94	$2,370	$2,660	-11%
67	Raymond W. Smith	BELL ATLANTIC	103	$1,570	$1,780	-12%
68	George J. Sella Jr.	AMERICAN CYANAMID	102	$1,420	$1,630	-13%
69	J. Carter Bacot	BANK OF NEW YORK	99	$1,270	$1,460	-13%
70	Richard D. Wood	ELI LILLY	107	$1,460	$1,680	-13%
71	David C. Farrell	MAY DEPARTMENT STORES *	101	$2,450	$2,850	-14%
72	Thomas H. O'Brien	PNC FINANCIAL	102	$1,440	$1,690	-15%
73	L. G. Rawl	EXXON	101	$3,730	$4,380	-15%
74	John J. Murphy	DRESSER INDUSTRIES	95	$1,070	$1,260	-15%
75	John G. Smale	PROCTER & GAMBLE	102	$2,750	$3,270	-16%
76	Harold E. Sells	F.W. WOOLWORTH *	106	$1,660	$1,990	-17%
77	David W. Grainger	W.W. GRAINGER	102	$870	$1,050	-17%
78	Robert D. Kunisch	PHH	95	$910	$1,100	-17%
79	A. W. Clausen	BANKAMERICA	94	$2,530	$3,080	-18%
80	Lee A. Iacocca	CHRYSLER	99	$6,120	$7,460	-18%
81	L. S. Skaggs	AMERICAN STORES *	98	$2,810	$3,430	-18%
82	Lewis T. Preston	J.P. MORGAN	99	$2,740	$3,350	-18%
83	Richard J. Stegemeier	UNOCAL	103	$1,250	$1,570	-20%
84	R. J. Ventres	BORDEN	103	$2,830	$3,580	-21%
85	Ralph S. Larsen	JOHNSON & JOHNSON	108	$1,890	$2,420	-22%
86	John F. McGillicuddy	MANUF. HANOVER	94	$2,010	$2,600	-23%
87	Robert E. Boni	ARMCO	90	$880	$1,140	-23%
88	John B. Fery	BOISE CASCADE	99	$1,180	$1,530	-23%
89	James D. Robinson III	AMERICAN EXPRESS	101	$4,270	$5,540	-23%
90	William E. LaMothe	KELLOGG	110	$1,070	$1,400	-24%
91	D. Wayne Calloway	PEPSICO	110	$4,720	$6,180	-24%
92	Richard J. Flamson III	SECURITY PACIFIC	100	$2,680	$3,510	-24%
93	William D. Smithburg	QUAKER OATS	106	$1,690	$2,220	-24%
94	James L. Johnson	GTE	103	$1,810	$2,390	-24%
95	Richard J. Mahoney	MONSANTO	101	$2,740	$3,620	-24%
96	Edgar S. Woolard Jr.	DU PONT	102	$2,020	$2,670	-24%
97	Ira Stepanian	BANK OF BOSTON	96	$1,350	$1,790	-25%
98	Samuel Zell	ITEL	102	$1,930	$2,580	-25%
99	Richard M. Morrow	AMOCO	98	$1,880	$2,520	-25%
100	Hamish Maxwell	PHILIP MORRIS	110	$3,870	$5,230	-26%
101	Robert D. Krebs	SANTA FE PACIFIC	99	$1,610	$2,190	-26%
102	Donald E. Petersen	FORD MOTOR	107	$4,560	$6,220	-27%
103	William O. Bourke	REYNOLDS METALS	109	$2,750	$3,760	-27%
104	William L. Weiss	AMERICAN INF. TECH.	100	$1,480	$2,040	-27%
105	Frank P. Popoff	DOW CHEMICAL	108	$2,830	$3,920	-28%
106	Sam Ginn	PACIFIC TELESIS	105	$1,370	$1,900	-28%
107	Ted C. Wetterau	WETTERAU	103	$1,630	$2,300	-29%
108	Robert D. Kennedy	UNION CARBIDE	101	$1,930	$2,760	-30%
109	Donald R. Beall	ROCKWELL INT'L	98	$1,360	$1,950	-30%

*For fiscal year ended 1/31/89.



became popular in late 1987 after the October crash put many executives' options underwater. Several sympathetic boards simply called in the old options and gave executives replacements at the new, lower market price.

Special mention goes to Beverly Enterprises, usually included in our study but absent this year because of a change in CEO. This company swapped option shares for its executives not once but twice within 15 months. The original options carried strike prices up to $18.625 per share, discouragingly high when the stock price fell to $8.75. So an openhanded board had Beverly executives turn in their shopworn option agreements for new ones carrying a marked-down strike price of $8.75. Beverly's stock took no notice and plummeted to $4.375, leading a by now overworked board to erase the strike price a second time and substitute a new one of $4.375. If the price of Beverly stock keeps on dropping, the company's future option agreements will have to feature 20-pound bond paper for all pages except the one containing the strike price, and 300-pound paper for that special page. Otherwise all those

Thanks for the raise. May I offer you one?

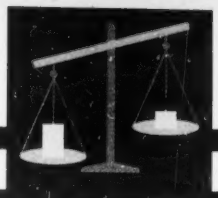
CEOs aren't the only ones whose pay is rising remarkably fast. Many companies are sharply increasing what they pay outside directors—who of course decide what to pay the CEO. Not only do some directors receive pensions amounting to 100% of base pay after just five to ten years of board service, but an increasing number also are getting stock options and—hold on to your seat—restricted stock grants. The value of what an outside director of a major company receives can easily top $50,000 a year. These many goodies have been creeping into boardrooms for a few years, but in 1989 they seemed to reach critical mass: Soon it may be an odd company that *doesn't* offer them.

The outside-director pay-setting process is as ritualistic as a Japanese kabuki dance. A perceptive CEO knows that he should call in a consultant every couple of years to review what his outside directors are earning. More often than not, a grave inequity is discovered. The CEO then presents the consultant's report to the board, which reluctantly accepts a big increase in pay. What is happening here? Certainly it could not be that the regulated, namely the CEOs, are attempting to influence the regulators, namely the directors—could it?

CEOs who trailed the computer model's pay

	CEO	COMPANY	PERFORMANCE IQ	COMPENSATION in thousands ACTUAL	MODEL	PERCENT LOWER
110	John R. Stafford	AMER. HOME PRODUCTS	107	$2,660	$3,840	-31%
111	George A. Roberts	TELEDYNE	92	$820	$1,200	-32%
112	Vincent A. Sarni	PPG INDUSTRIES	103	$2,360	$3,480	-32%
113	Joseph T. Gorman	TRW	98	$1,280	$1,890	-32%
114	Kenneth T. Derr	CHEVRON	98	$1,130	$1,680	-33%
115	James R. Eiszner	CPC INTERNATIONAL	106	$2,210	$3,340	-34%
116	Ronald W. Allen	DELTA AIR LINES	98	$1,760	$2,660	-34%
117	Thomas S. Murphy	CAPITAL CITIES/ABC	101	$1,930	$2,920	-34%
118	Allen F. Jacobson	3M	104	$2,020	$3,060	-34%
119	William H. Taylor	CIGNA	97	$1,200	$1,820	-34%
120	J. W. Marriott Jr.	MARRIOTT	107	$1,680	$2,560	-34%
121	Daniel M. Tellep	LOCKHEED	90	$930	$1,430	-35%
122	Stanley C. Pace	GENERAL DYNAMICS	93	$2,500	$3,850	-35%
123	Edmund T. Pratt Jr.	PFIZER	101	$2,180	$3,360	-35%
124	Frank W. Luerssen	INLAND STEEL	97	$880	$1,370	-36%
125	David A. Jones	HUMANA	101	$1,990	$3,120	-36%
126	David R. Whitwam	WHIRLPOOL	96	$1,190	$1,870	-36%
127	Robert W. Weinig	EASTERN ENTERPRISES	94	$600	$960	-38%
128	Norman R. Augustine	MARTIN MARIETTA	99	$1,780	$2,850	-38%
129	John R. Hall	ASHLAND OIL	101	$1,610	$2,580	-38%
130	John H. Bryan Jr.	SARA LEE	106	$2,600	$4,270	-39%
131	Maurice R. Greenberg	AMERICAN INT'L	105	$1,770	$2,910	-39%
132	Roger W. Stone	STONE CONTAINER *	105	$1,240	$2,040	-39%
133	Emil P. Martini Jr.	BERGEN BRUNSWIG	100	$1,350	$2,230	-39%
134	Tom H. Barrett	GOODYEAR TIRE & RUBBER	95	$990	$1,640	-40%
135	W. S. White Jr.	AMERICAN ELECTRIC POWER	100	$660	$1,100	-40%
136	Jack A. MacAllister	US WEST	100	$1,600	$2,670	-40%
137	Paul W. Douglas	PITTSTON	95	$820	$1,370	-40%
138	C. J. Silas	PHILLIPS PETROLEUM	99	$1,610	$2,730	-41%
139	R. Gordon McGovern	CAMPBELL SOUP	103	$1,870	$3,180	-41%
140	Charles F. Knight	EMERSON ELECTRIC	101	$1,990	$3,420	-42%
141	Thomas L. Phillips	RAYTHEON	101	$1,430	$2,460	-42%
142	Willard C. Butcher	CHASE MANHATTAN	97	$1,900	$3,270	-42%
143	Ray B. Mundt	ALCO STANDARD	100	$1,750	$3,040	-42%
144	Charles E. Exley Jr.	NCR	103	$2,100	$3,650	-42%
145	John S. Reed	CITICORP	99	$2,710	$4,730	-43%
146	Kenneth H. Olsen	DIGITAL EQUIPMENT	104	$2,840	$4,960	-43%
147	William J. Alley	AMERICAN BRANDS	103	$2,590	$4,570	-43%
148	Bob G. Gower	LYONDELL PETROCHEMICAL	111	$870	$1,570	-45%
149	Thomas W. Field Jr.	MCKESSON	99	$1,620	$2,950	-45%
150	W. C. McCord	ENSERCH	93	$920	$1,680	-45%
151	Philip E. Lippincott	SCOTT PAPER	105	$1,490	$2,770	-46%
152	John L. Clendenin	BELLSOUTH	100	$1,590	$2,990	-47%
153	Josh S. Weston	AUTOMATIC DATA PROC.	105	$830	$1,580	-47%
154	Burnell R. Roberts	MEAD	103	$1,050	$2,000	-48%
155	Edward H. Budd	TRAVELERS	95	$1,550	$3,040	-49%
156	Paul H. O'Neill	ALUMINUM CO. OF AMERICA	101	$1,800	$3,540	-49%
157	Roger B. Smith	GENERAL MOTORS	98	$2,430	$4,790	-49%
158	Darwin E. Smith	KIMBERLY-CLARK	105	$1,390	$2,750	-49%
159	Laurence A. Tisch	CBS	102	$1,670	$3,350	-50%

*1988 data.



erasures are just going to leave a big hole.

Do American CEOs get paid too much? That is a matter of judgment and philosophy, not just numbers and computer models. But surely there is some point beyond which pay becomes excessive. And in light of the pay levels and practices revealed in this year's study, it is hard not to conclude that we're already there. F

New heresy: Maybe pay doesn't motivate

Nearly everyone believes that CEOs should be paid according to performance, on the theory that this will motivate them to perform better. It just makes sense. Yet impressive new evidence suggests, disturbingly, that this reasoning may not hold up.

The evidence arises from research performed for an article in the current *Harvard Business Review* titled "CEO Incentives—It's Not How Much You Pay, but How." Don't look for the evidence *in* the article, however. As *HBR* editor Rosabeth Moss Kanter summarizes the story: "CEOs are not paid properly—rewarded when the company performs well and penalized when it performs poorly."

That view sounds reasonable, and I have long supported it. But consider the evidence. The authors, professor Michael C. Jensen of the Harvard business school and associate professor Kevin J. Murphy of the University of Rochester business school, examined 430 large companies and calculated how closely changes in the CEO's pay mirrored the performance of the company's stock. They produce two tables, which list the CEOs of the 25 companies with the best incentives—meaning combinations of compensation and shareholdings that are highly sensitive to changes in shareholder value—and the 25 with the worst. But oddly, the article does not report how the performance of these two groups compares. If their theory is correct, the first should have performed much better than the second.

So I compared the two groups. Result: The "best" companies were no better—and no worse—in total return to shareholders than were the "worst." And this applies for shareholder return periods ranging all the way from one year to ten years.

Intrigued, I looked at the data for all 430 companies. For each one the authors had come up with two figures showing how sensitive the CEO's compensation was to company performance. One was based on the CEO's pay; the other was based on his pay plus the value of his shareholdings. Using standard statistical techniques, I looked for a relationship between pay-for-performance sensitivity on the one hand and total return to shareholders on the other. If Jensen and Murphy—and the overwhelming weight of opinion about CEO pay—are right, there should be a strong relationship.

In looking, I used both measures of pay sensitivity, and for each one I examined total return to shareholders over the past year, two years, three years, and so on through the past ten years. I thus performed 20 separate analyses, each involving more than 400 companies. Result: In every case—20 out of 20—there was no significant relationship.

Jensen and Murphy argue vigorously for tying the CEO's fortunes more strongly to the company's by making him or her a much larger stockholder, and they simply assume that this will improve performance. The real-world effect of this recommendation is not in much doubt: Compensation committees, citing the *HBR* article, will pile tons of shares, in the form of stock options or restricted stock, *on top of* their CEOs' current pay packages.

CEOs who trailed the computer model's pay

	CEO	COMPANY	PERFORMANCE IQ	COMPENSATION in thousands ACTUAL	MODEL	PERCENT LOWER
160	Francisco A. Lorenzo	TEXAS AIR	92	$2,350	$4,790	-51%
161	Preston R. Tisch	LOEWS	104	$990	$2,020	-51%
162	Brenton S. Halsey	JAMES RIVER	98	$1,190	$2,430	-51%
163	J. J. Pinola	FIRST INTERSTATE BANCORP	96	$1,470	$3,060	-52%
164	Walter F. Williams	BETHLEHEM STEEL	97	$1,450	$3,020	-52%
165	Robert F. Daniell	UNITED TECHNOLOGIES	97	$1,980	$4,130	-52%
166	David T. Kearns	XEROX	99	$1,910	$4,070	-53%
167	W. R. Howell	J.C. PENNEY	102	$1,790	$3,830	-53%
168	Edward A. Brennan	SEARS ROEBUCK	96	$2,260	$4,840	-53%
169	L. Stanley Crane	CONSOLIDATED RAIL *	97	$840	$1,810	-54%
170	Thomas V. Jones	NORTHROP	94	$890	$1,920	-54%
171	George H. Weyerhaeuser	WEYERHAEUSER	97	$1,430	$3,100	-54%
172	John F. McDonnell	MCDONNELL DOUGLAS	95	$750	$1,630	-54%
173	D. O. Andreas	ARCHER DANIELS MIDLAND	102	$1,360	$2,970	-54%
174	Edwin Lupberger	ENTERGY	95	$690	$1,510	-54%
175	Laurence E. Hirsch	CENTEX	91	$500	$1,110	-55%
176	George A. Schaefer	CATERPILLAR	100	$1,460	$3,250	-55%
177	Jerry Farrington	TEXAS UTILITIES	98	$500	$1,130	-56%
178	James J. O'Connor	COMMONWEALTH ED.	98	$600	$1,370	-56%
179	Joseph E. Antonini	K MART	101	$1,780	$4,110	-57%
180	Jerry R. Junkins	TEXAS INSTRUMENTS	95	$1,490	$3,460	-57%
181	E. Dean Werries	FLEMING	93	$710	$1,690	-58%
182	Colby H. Chandler	EASTMAN KODAK	99	$1,350	$3,280	-59%
183	Richard A. Clarke	PACIFIC GAS & ELECTRIC	95	$860	$2,100	-59%
184	David O. Maxwell	FED. NAT'L MORT. ASS'N	105	$1,410	$3,460	-59%
185	Lyle Everingham	KROGER	105	$1,160	$2,850	-59%
186	John F. Woodhouse	SYSCO	103	$1,130	$2,840	-60%
187	Frank Shrontz	BOEING	100	$1,560	$3,950	-61%
188	Edward L. Addison	SOUTHERN	100	$830	$2,150	-61%
189	W. Michael Blumenthal	UNISYS	97	$1,320	$3,520	-63%
190	Jack Twyman	SUPER FOOD SERVICES	103	$720	$1,960	-63%

*1988 data.

AIRPORT 2000— A HORROR STORY?

You know all about delayed flights, gridlocked runways, crowded terminals. You haven't seen anything yet. Only a burst of building can head off more trouble. ■ *by Kenneth Labich*

TRAVELERS' ADVISORY: In just a few years, things could get very, very ugly. Along with mobs of weary souls, you will be stranded for hours at U.S. terminals whenever the weather turns bad. Even under clear skies, you will face long delays almost every time you fly. Forget that last-minute business trip—every seat on nearly every flight may be booked weeks in advance. This is the way air travel could end up in the U.S., no bang but a whole lot of whimpering.

According to the most modest projections, 800 million passengers annually will travel by plane by the year 2000; the U.S. air traffic system is already straining under a yearly burden of less than 500 million. Airports have not kept pace with passenger volume, and will have a hard time catching up. The Department of Transportation (DOT) has identified 21 major airports subject to heavy delays—20,000 plane-hours or more a year—and predicts that another 20 will join the list by 1998. Says Transportation Secretary Samuel K. Skinner: "This level of delays is unacceptable, but the situation may worsen. Nobody anticipated the demand."

The DOT estimates that delays cost the airlines and U.S. businesses at least $5 billion each year in fuel costs and wasted time.

Wide open spaces, few hostile neighbors, and minimal environmental worries help explain why Denver is uniquely able to build a new $2.3 billion airport.

In addition, state and local economies depend on the revenues and commercial activity generated by their airports. Oris W. Dunham Jr., executive director of Dallas–Fort Worth International Airport, claims that two new runways at DFW would bring in an extra $30 billion over the next ten years.

Will larger airplanes help move passengers more efficiently? Not really. They are cost-effective only on well-traveled routes, and airlines will still need many smaller aircraft to shuttle passengers into and out of the bigger airports. What's needed is a burst of building on a grand scale. The six key air hubs—New York, Chicago, Los Angeles, Dallas, Denver, and Atlanta—will all require new airports before long, and a score or more smaller cities will need to expand runways, terminals, parking lots, and access roads. A ten-year, $77 billion development program is necessary, and it cannot begin soon enough. No major new airport that is just in the planning stages could be open for business until the next century. Says Ramon Ricondo, a Chicago airport consultant: "You could start digging today, and you would still have a big problem."

Not nearly enough digging is under way. Consider the obstacles. Many big-city airports, plunked down decades ago amid rolling fields, are now ringed by densely populated suburbs, which are filled with community activists, quick to oppose any project that will allow more flights. Airports, says Dunham, have become as popular as garbage dumps and insane asylums. Even a community that appreciates an airport's economic benefits can grow weary of noise and congestion. Says Dunham: "Living near an airport is like being married to a very wealthy person who snores."

Muddled management at many airports adds to the problem. Most major facilities are operated by municipal or county authorities, often hypersensitive to community pressures or local politics. When a big development project is approved, the authorities may choose local architects and engineers with little or no aviation experience. Result: a terminal where passengers have to triple-park to unload their baggage or trudge for what seems to be miles between gates. "The U.S. is full of airports that are failures, designed by incompetents," says a senior aviation planner. Among the bad examples cited by experts in the field: New York's LaGuardia, Pittsburgh's International, and Washington's National.

REPORTER ASSOCIATE *Rosalind Klein Berlin*

Airport managers must also please diverse constituents. The Federal Aviation Administration, responsible for safe operations at the site, can unleash a blizzard of bureaucratic objections on everything from runway placement to where the parking lot should go. The airlines can tie up plans for months, even years, as they bicker over the costs, size, and architectural details of their terminal space. Big carriers that dominate a market may be especially recalcitrant about freeing up gates to some rival.

Federal officials have been slow to release funds for airport development. The Aviation Trust Fund, supported by an 8% ticket tax, has grown to $7 billion or more—one of the government's rare surpluses. Skinner, who usually receives higher marks than his predecessors from industry critics, says the money will be used up quickly in the next few years as expensive control-tower technology comes on line. Congress is studying a plan to fund airport development through so-called passenger facility charges. The airlines would collect the fees as part of the fare—they would vary from airport to airport but would probably be less than $3 per flight. Then the airlines would plow the funds back to the airports listed on the ticket. As supporters see it, the plan's appeal is that the money would not have to filter through the federal bureaucracy.

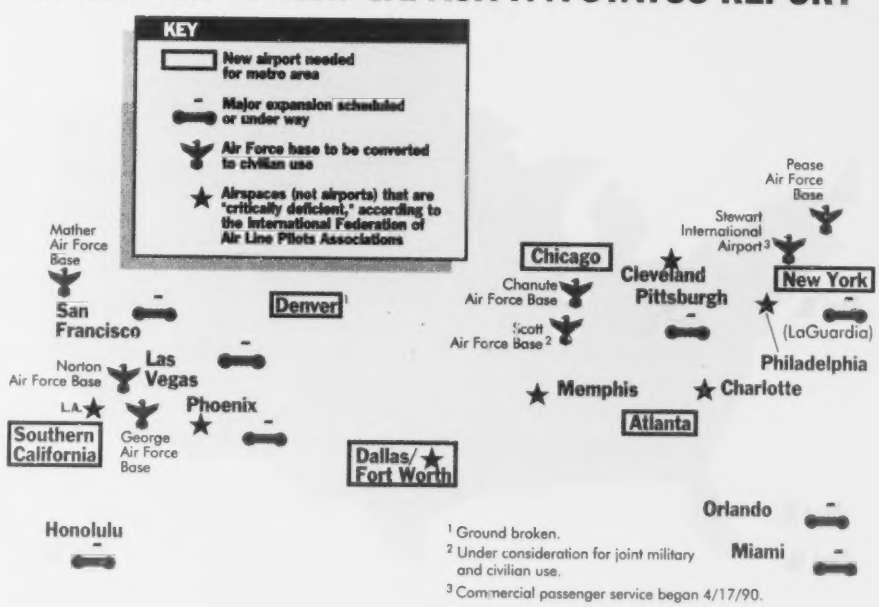
Air traffic snarls at major hubs, particularly New York and Chicago, can screw up the nationwide system. But those cities are exactly where the population is most dense and the obstacles to development most frustrating. Says Jack Bishop, an associate with the engineering firm Burns & McDonnell: "Where we need airports the most are where they are the toughest to build."

Delays were up sharply last year at all three New York airports—Kennedy, LaGuardia, and Newark—and the future promises more of the same. The Port Authority of New York and New Jersey, which operates the facilities, projects that passenger volume will grow from 75 million or so a year to 115 million by 2000.

Embattled local officials concede the looming capacity gap, and say the only long-term solution is to carve space for a fourth airport out of the region's teeming population centers. That proposition is not even close to the drawing boards because of the fierce opposition sure to come from local homeowners. Jim Muldoon, a senior Port Authority official, seems resigned: "I don't think there's any question our airports will be among those with the most delays." To avoid some of them, American Airlines has begun a few flights a week out of Stewart International Airport, a former U.S. Air Force base about 60 miles up the Hudson from New York City and well beyond the Port Authority's purview.

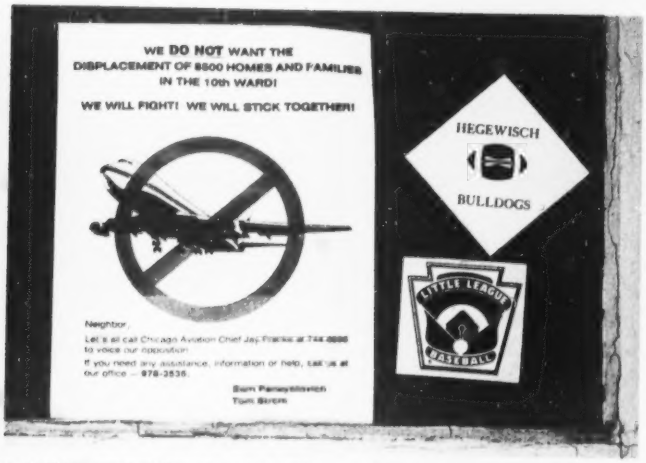
Aviation planners in Chicago are further along, though they could face years of politi-

IN SEARCH OF NEW CAPACITY: A STATUS REPORT



PHOTOGRAPH BY PAUL CHESLEY

DAVID MARSEC



Residents of Hegewisch, a community on Chicago's South Side, are battling plans to build a new airport, the city's third.

cal wrangling before they can pour concrete. Without a serious expansion effort, giant O'Hare and tiny Midway airports will be overwhelmed. The local passenger load is expected to more than double, to 130 million annually, by 2010. Officials would like to deal with the overflow in the short term by adding two runways at O'Hare, then start building a third airport in the Lake Calumet area on the city's southeast side.

The development program, which has the strong backing of Mayor Richard M. Daley and what's left of his Democratic political machine, has some merit. O'Hare is already the country's most congested airport, with over 100,000 hours in annual delays that ripple through the air traffic system, causing trouble from coast to coast. The city's plan for a third airport makes sense too. The field would be located in a sparsely settled area about a half-hour from downtown that is dotted with abandoned steel plants and toxic waste dumps. Industrial activity has dwindled in that quarter over the years, and employment has dropped 35%. Planners claim the airport eventually would produce 200,000 jobs and $14 billion in annual revenues. Says Robert J. Repel, a Daley assistant who heads the development effort: "This is a model public-works project that could signal a rebirth of part of the Rust Belt."

As in any big city, airport opponents are everywhere. Population growth has been spectacular in the suburbs near O'Hare, and an estimated 78,000 homes surround the field. The city's plan to add runways has been met with outrage. The new South Side airport project has also attracted critics. Leaders from Hegewisch, a close-knit Eastern European community that would be wiped out by the airport project, have organized a vocal protest movement. Meanwhile, politicians from outlying Illinois towns and neighboring Indiana are casting covetous eyes on the economic bonanza of a new airport. A bi-state commission is studying several sites farther from the city, but no decision is expected soon.

On the plus side, the FAA's program to replace aging technology is finally paying off. Airline executives and airport planners grumble about the glacial pace of the change, but no one doubts the crucial role that the new equipment must play in the race to keep ahead of passenger demand. Says Joseph Del Balzo, the FAA's executive director of systems development: "Without this new technology, the system would have ground to a halt by now."

The FAA's $15.8 billion plan, begun in 1981, is built around mainframes that provide instantaneous traffic and weather data to 20 control centers around the country. New radar systems and wind-shear detectors are in place at most big airports, and airborne collision avoidance systems will be standard in most cockpits within three years.

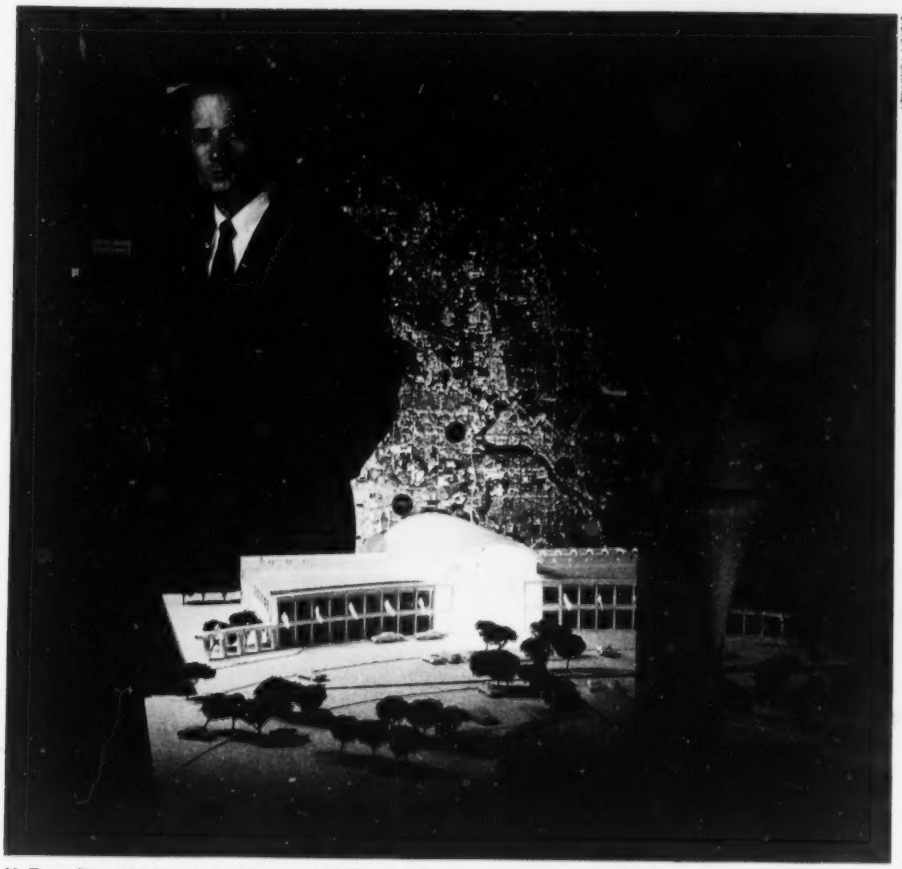
So far, the airlines have resisted the FAA's call for microwave landing systems (MLS) because they would cost about $200,000 each. But when the price comes down, this technology will allow more planes to land per hour in poor weather. Del Balzo estimates that if all aircraft landing at New York's three big airports were equipped with MLS, the annual capacity boost would amount to about one-half of an entirely new facility.

Another new radar, developed by Allied-Signal Aerospace, is being tested at the Raleigh-Durham airport. The system, called Precision Runway Monitor radar, uses an

RATING THE U.S. AIRPORTS

BUSIEST AIRPORTS 1989	TOTAL NUMBER OF PASSENGERS in millions	DISTANCE FROM CITY CENTER in miles	PERCENT OF OPERATIONS DELAYED 15 MINUTES OR MORE
O'HARE/Chicago	59.1	17	10.2%
DALLAS–FORT WORTH INTERNATIONAL	47.6	15	2.4%
LOS ANGELES INTERNATIONAL	45.0	15	1.0%
HARTSFIELD/Atlanta	43.3	10	2.3%
JOHN F. KENNEDY/New York	30.3	15	6.0%
SAN FRANCISCO INTERNATIONAL	29.9	14	7.0%
STAPLETON/Denver	27.6	5	2.6%
MIAMI INTERNATIONAL	23.4	7	0.2%
LAGUARDIA/New York	23.2	8	9.4%
HONOLULU	22.6	4	under 0.1%
LOGAN/Boston	22.3	3	3.0%
DETROIT METRO	21.5	21	1.6%
NEWARK INTERNATIONAL	20.9	16	10.3%
SKY HARBOR/Phoenix	20.7	4	0.7%
LAMBERT/St. Louis	20.0	12	2.8%

SOURCES: AIRPORT OPERATORS COUNCIL INT'L, FAA



STEVEN PUMPHREY

H. Ross Perot Jr. has recently opened Alliance Airport, a privately operated cargo facility in Fort Worth.

electronic scanning technique to permit simultaneous landings on runways that are closer than the 4,300-foot minimum currently required for instrument conditions. In bad weather, that could translate into a 40% or 50% capacity increase at some airports.

Among the other ways to whittle away the capacity crisis, carriers might be forced to stagger their schedules even more than they have to avoid the early-morning and early-evening crunch times. Some airport managers—at New York's Kennedy and LaGuardia, for example—have boosted landing fees to discourage corporate aircraft and other small planes from these peak periods. New vertical-takeoff aircraft could open inner-city heliports to more commercial traffic; new planes with wings that fold up on the tarmac could allow for a snugger fit between gates.

The clearest sign of progress is Denver's construction of a $2.3 billion airport to replace 60-year-old Stapleton. Denver International will be the first big new U.S. airport since Dallas–Fort Worth was completed in 1974, and will be among the world's largest.

Denver enjoys the rare luxury of wide open spaces not far from the city limits, and so finding a suitable site was far less difficult than in some densely packed Eastern metropolises. The city was able to buy a 53-square-mile parcel only about a half-hour from downtown. The land, mostly used for dry-land wheat farming, was sparsely settled and presented few environmental obstacles. Says Richard F. Veazey, the new airport's chief planner: "As far as the birds and bunnies go, we are in great shape."

Opponents charged the airport was unnecessary, but Mayor Federico Peña and much of the business community fought hard for it. Among the most persuasive documents in the debate was an economic-impact study done for Colorado National Bankshares Corp. It concluded that a new airport would produce, directly or indirectly, about 90,000 jobs in the region between 1995 and 2000. A citywide referendum on the airport passed by a 2-to-1 margin.

That's not the end of the story. City fathers now have to win the cooperation of the airlines: They are expected to bear, over time, two-thirds of the project's capital costs. But Denver's hub carriers are United and Continental; the former is involved in a continuing takeover battle, and the latter has been struggling. Continental recently agreed to go along, but United is still holding out.

Cities lacking Denver's ample real estate may have to find more inventive solutions—such as commercializing abandoned or underutilized military air bases. These fields boast superb runways, easily able to handle the largest commercial aircraft. Neighbors accustomed to the sonic booms of jet fighters may not even notice the far quieter commercial airliners. The FAA is closely studying military airfields in New Hampshire, central Illinois, and Southern California, and has approved American's limited service to Stewart. Eventually, a dozen or more military bases could be used part time for cargo and passengers.

PLANNERS are also looking at new techniques to win over hostile neighbors. In Chicago, officials are working with local banks to help homeowners who may be forced to move if a third airport is located on the southeast side. The city may guarantee low interest rates for new mortgages or buy some homes and allow residents to stay in them for a specific period.

Oris Dunham, DFW's director, has considered diverse methods to woo opponents to his $3.5 billion expansion plans, which include the building of two new runways. Says he: "Every time I start talking about runways, they start talking about lawsuits." Airport authorities may guarantee a minimum selling price to homeowners concerned about plunging property values. Or officials may offer nearby residents 20% to 25% of their house value in exchange for an "aviation easement," permanent permission to use the airways over the property. To show that DFW produces less noise than neighbors might think it does, Dunham's people set up monitors on the streets of one town adjacent to the field. Five of the six monitors picked up normal street noise louder than that produced at DFW.

The most conservative forecasts set DFW passenger volume at 100 million annually by 2005, up from 47.6 million in 1989 and far more than the airport can handle. Actual growth could be much greater. The Dallas–Fort Worth area appears to be in the early stages of a booming economic recovery, and DFW's dominant carriers,

MAN VS. THE AIRPORT RENTAL CAR

For many travelers, like Washington bureau chief Lee Smith, airport confusion does not end once the plane has landed. Here is his report:

As with many city dwellers who don't own cars, my Big Three are not GM, Ford, and Chrysler but Hertz, Avis, and National. My garage is the airport rental car lot. Why is it that once I spend a couple of days learning to love my car, Hertz or whoever switches it with another? Rental car outfits offer such variety that every trip begins with Step-Into-A-Mystery. What the business traveler really needs is a simple, generic, easy-to-understand airport auto.

CHARLIE ARCHAMBAULT

Smith: in search of a generic, user-friendly auto

It's my first visit to Minneapolis, say, and I fly in during a midnight downpour. I wonder if the woman at the rental car counter will entrust one of her fleet to a guy who has forgotten the difference between a Corolla and a Corsica, so I listen to what the fellow in front of me asks for. My turn:

"What kind of car would you like, sir?"

"I'll take a Lemur."

"I'm sorry. All we have left is a Rhesus Supreme, but we can offer it at the same rate."

I take it.

The courtesy bus drops me in a flood of rainwater sweeping across the parking lot. Hmm, I've never been inside a Rhesus before. In an earlier epoch door handles, lights, and windshield wipers were all in the same place and radios had two knobs. In the age of elegant variation, no manufacturer would think of putting any of those devices in the same place as a competitor.

The attendant who serviced the car tuned the radio to the heavy metal station where it is stuck at thunder volume. I'd like to ask for help, but nobody is in the lot at this hour, and even if someone were there I couldn't get the window down.

I get the Rhesus moving nonetheless, past the sign WARNING! DO NOT BACK UP. SEVERE TIRE DAMAGE. So I take my throbbing rock concert on the road. The parking lights, the only ones I can locate, are doing their brave best to illuminate the way. The rain is cascading down the windshield because the handle that was wipers on my last car is the turn signal on this one. I leave it on so I can read the map by the flashing green arrow. I find my hotel, but only after doubling back through the airport—twice.

It's several days later and time to go home. I leave the hotel early so that I can buy gas and avoid the prices at the rental car lot, where they apparently fill the tanks with Chivas Regal. The only station near the airport is self-service, which I hate. My father told me never to pump gas or drink anything blue. I roll up my sleeves anyhow, but I can't find where the Rhesus manufacturer has hidden the gas tank lock release. There's no way the cashier will come out of his reinforced Plexiglas bunker to help. My plane leaves in half an hour.

Time is really tight. Was that RENTAL CAR RETURN on the sign I just passed? Why didn't the woman at the counter tell me that the return lot was in a neighboring county?

Hope there's another flight after the one I just missed.

American and Delta, are among the most expansive in the U.S.

H. Ross Perot Jr. is taking advantage of the area's airport squeeze: He is developing the privately operated Alliance Airport in Fort Worth. The idea is to attract cargo traffic by offering easy access to an adjoining complex of warehouses and hangars. Washington has chipped in $39 million for the project, and Perot plans to get most of his revenues from the sale and development of the land surrounding the airfield. American Airlines has broken ground on a $400 million engineering and maintenance center at the site.

The airport has gone forward with few hassles, mainly because as a private project the bidding and approval processes were streamlined. Says Perot, 31: "Alliance brings a purely business point of view to operating an airport, which, after all, is a business." Having caught the aviation bug, Perot has started a separate company, Pinnacle Air Services, that will seek operating contracts at airports all over the country.

PEROT is not the first to try the private management of airports. Lockheed Corp. operates a regional airport in Burbank, California, and will operate a new passenger terminal at Toronto's airport. More and more experts are considering the private operation, and even ownership, of U.S. airports as a way out of the mess. The Reason Foundation, a conservative research group in Santa Monica, California, has sketched a potentially stunning economic windfall for the public. If the 50 largest U.S. airports were sold to private corporations, their current municipal owners would reap about $23.5 billion. The newly privatized facilities would generate an estimated $400 million annually in local property tax revenues and $600 million in federal tax revenues. Who has qualms about privatization? The FAA, for one, is concerned about distributing federal funds to private enterprises.

But private owners will catch the same flak that the public airport authorities will if they try to expand. Skinner says only a concerted education effort on the importance of the air traffic system will finally win the day. "People have to realize that a certain amount of noise is necessary if we're going to have a strong economy," he says. As logical as that point is, it will not convert the homeowner who feels harassed by jumbo jets thundering over his rooftop. The best guess: Air travel will get a lot worse before it gets better. F

WHERE THE CEOs WENT TO COLLEGE

A FORTUNE survey of the nation's top bosses shows that the Ivies and Big Ten schools rank high. But wait! Little Johnny or Janie may want to consider Washington & Lee. ■ *by Susan Caminiti*

MICHAEL MARSLAND

IF YOU WANT to become chief executive of a FORTUNE 500 company, where should you go to college? Judging by past performance, you'd better practice singing "Boola Boola" and tune up your Whiffenpoofs repertoire. Yale tops all schools in its share of alumni CEOs, with Princeton a strong second, followed by the 64 other colleges in the table at right. The big names near the top of the list are those you might expect. But when the schools' ability to graduate future CEOs is adjusted for class size (see the Power Factor column), a few lesser-known institutions outshine the giants. Relatively speaking, tiny Washington & Lee of Lexington, Virginia, has launched more alumni toward the corner office than mighty Harvard.

Earlier this year we asked 1,891 present and former CEOs of FORTUNE 500 and Service 500 companies to tell us where they went to school and what they studied. (At 109 companies the original CEO was still in charge.) We also asked where they went for their graduate degrees. Nearly 1,500 top executives replied.

The Ivy League racked up the most impressive numbers. A total of 156 CEOs graduated from these eight universities, which are considered some of the most prestigious in the nation. Among the 43 current CEOs who helped Yale earn the valedictory spot: Roberto Goizueta of Coca-Cola, Samuel Heyman of GAF, and John Akers of IBM. Princeton boasts 32 CEO alumni; Norman R. Augustine of Martin Marietta went there. Harvard is alma mater for 25, including Scott McNealy of Sun Microsystems and Colman Mockler Jr. of Gillette. The other schools of the Ivy League each turned out more than ten of today's CEOs, with the exception of the University of

A future CEO? This woman leads the graduation procession at Yale, the university that turned out the greatest number of today's chief executives.

FROM CAMPUS TO CORNER OFFICE: HOW THE SCHOOLS STACK UP

SCHOOL	NUMBER OF CEOs	CLASS SIZE	POWER FACTOR
Yale	43	883	4.87
Princeton	32	687	4.66
Harvard	25	1,108	2.26
Northwestern	19	996	1.91
Cornell	17	1,614	1.05
Columbia	15	966	1.55
Stanford	15	1,245	1.20
University of Michigan	13	2,764	0.47
Dartmouth	12	605	1.98
University of Illinois	11	3,911	0.28
University of Missouri	11	2,101	0.52
University of Texas	11	2,280	0.48
Purdue	10	2,077	0.48
MIT	9	779	1.16
University of Wisconsin	9	2,682	0.34
University of Pennsylvania	8	1,555	0.51
Ohio State	8	2,829	0.28
Auburn	7	1,418	0.49
Duke	7	690	1.01
University of Virginia	7	721	0.97
City College of New York	7	2,496	0.28
DePauw	6	390	1.54
University of the Holy Cross	6	407	1.47
Marquette	6	1,037	0.58
University of North Carolina	6	1,201	0.50
University of Notre Dame	6	1,096	0.55
New York University	6	3,309	0.18
University of Oregon	6	1,017	0.59
Penn State	6	2,376	0.25
University of Pittsburgh	6	1,696	0.35
University of Arkansas	5	858	0.58
Indiana University	5	1,845	0.27
Iowa State	5	1,389	0.36
Michigan State	5	2,766	0.18
North Carolina State	5	809	0.62
University of Oklahoma	5	1,663	0.30
So. Methodist University	5	826	0.61
University of South Carolina	5	717	0.70
Washington & Lee	5	175	2.86
Amherst	4	252	1.59
University of Florida	4	1,622	0.25
Georgetown	4	768	0.52
University of Georgia	4	1,355	0.30
University of Iowa	4	1,328	0.30
Lehigh	4	563	0.71
University of Maryland	4	1,656	0.24
University of Miami	4	1,601	0.25
University of Minnesota	4	4,142	0.10
Rice	4	330	1.21
Tufts	4	572	0.70
Vanderbilt	4	508	0.79
University of Washington	4	2,495	0.16
Brown	4	697	0.57
Boston University	4	2,307	0.17
University of California	3	6,080	0.05
Colgate	3	301	1.00
University of Colorado	3	N.A.	N.A.
Davidson	3	173	1.73
Georgia Institute of Tech.	3	997	0.30
Loyola (Chicago)	3	634	0.47
University of Chicago	3	447	0.67
University of Detroit	3	878	0.34
U.S. Military Academy	3	540	0.56
Wesleyan	3	174	1.72
Williams	3	237	1.27
Xavier	3	261	1.15

Sixty-six colleges graduated three or more chief executives of major American companies. The Power Factor measures the relative likelihood of your having made CEO if you graduated from a given institution. The higher the Power Factor, the greater the chance of a graduate's getting to the top.

Pennsylvania (eight) and Brown (four).

The dominance of the Ivy League is, if anything, increasing: Whereas 14% of the former CEOs surveyed hold Ivy League degrees, nearly 19% of the current CEOs do. The Big Ten schools of the Midwest also stand out. They graduated 88 current corner-office occupants. Northwestern leads the group with 19, followed by the University of Michigan with 13 and the University of Illinois with 11.

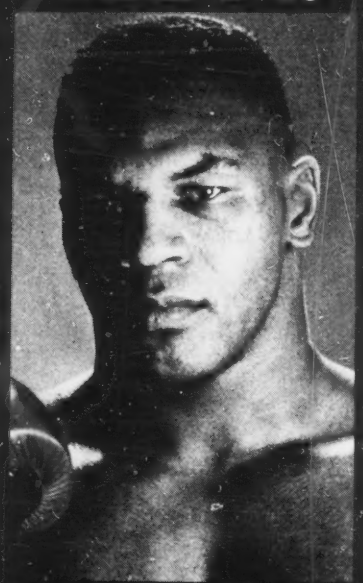
FORTUNE devised the Power Factor to gauge which colleges have been most successful on a per capita basis at schooling future corporate chiefs. Taking the average size of the graduating class for each school during the 1950s—the decade when most of today's company leaders earned their bachelor's degrees—we calculated the percentage accounted for by CEOs. By this measure Yale and Princeton kept the No. 1 and No. 2 spots, but Washington & Lee, a private liberal-arts university, vaulted past all other contenders. Another surprise: Davidson College, a North Carolina liberal-arts school that ranks seventh by Power Factor, behind No. 4 Harvard, No. 5 Dartmouth, and No. 6 Northwestern.

FORTUNE's survey turned up executives at both extremes of the educational spectrum. A. Robert Abboud of First City Bancorp of Texas, for example, holds three Harvard degrees (B.A., J.D., MBA), while Molex cofounder John H. Krehbiel Sr. attended 17 years of night school without earning a diploma. Perhaps the best-known dropout is former Apple Computer CEO Steven Jobs, who co-founded the company after saying goodbye to Reed College in Portland, Oregon, during his freshman year. But while everyone loves rags-to-riches stories in which the hero makes it to the top with only a meager education, an overwhelming 93% of today's chief executives are college graduates. The moral for students: If you want to occupy the corner office, don't show up without a college degree.

In fact, college might not be enough. To-

REPORTER ASSOCIATE *Therese Eiben*

HE'S BACK. AND HE'S NOT HAPPY.



On Saturday, June 16, Mike Tyson makes his dramatic return to the ring after his stunning defeat at the hands of James "Buster" Douglas. The former champ will face 1984 Olympic Gold Medalist Henry Tillman, who's already beaten him twice in amateur competition.

Also on the card, George Foreman continues his amazing comeback as he squares off against top contender Adilson Rodrigues.

It's sure to be a historic night, and it's only on HBO.

Live Saturday, June 16th, 10pm ET/7pm PT.

HBO
SIMPLY THE BEST

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GRADUATE SCHOOL	NUMBER OF CEOs	MBA	LL.B./J.D.	OTHER
Harvard	93	75	18	
Columbia	23	7	4	12
Stanford	19	16	2	1
University of Chicago	15	11		4
University of Pennsylvania	14	14		
University of Michigan	13	6	5	2
MIT	10			10
Northwestern	10	8	1	1
New York University	10	7		3
Cornell	9	3	4	2
University of Illinois	9		1	8
University of Virginia	6	1	4	1
Southern Methodist University	6		3	3
University of Texas	6			6
Princeton	6			6

Overwhelmingly, Harvard was the graduate school of choice for current CEOs. One out of every five with an advanced degree went to Harvard to get it. One out of every three with an MBA went there too.

day's chief executives, almost regardless of their industry, are an increasingly well-educated bunch. Technical businesses such as aerospace and chemicals have long attracted highly educated CEOs. But other industries are catching up. In forest products, for example, more than half the current CEOs have advanced degrees, compared with only 20% of their predecessors; in farm equipment the gap is even wider. One holdout is the textile industry, where an equal proportion of current and former CEOs—one-fourth—never finished college.

For all the leadership skills they teach, military schools are not necessarily a shortcut to jobs at the top. Only nine former and seven current CEOs came from such institutions, and the U.S. Military Academy at West Point is the only one to turn out three CEOs or more. Among its graduates: Rand Araskog, chief executive of ITT. An alumnus of the U.S. Naval Academy is Texaco's top gun, James Kinnear.

In one important respect, today's chief executives prepared for the corporate world differently from their predecessors: The number of CEOs with MBAs has nearly *tripled*. The emphasis has shifted even at the undergraduate level. Whereas most former CEOs of industrial companies majored in technical subjects such as mechanical engineering, current CEOs are more apt to have concentrated from the start on business and economics.

A. Robert Abboud of First City Bancorp holds three Harvard degrees: B.A., J.D., and MBA.

John H. Krehbiel Sr. of Molex went to 17 years of night school without earning a degree.

Thanks largely to its business school, Harvard leaves all other graduate programs in the dust (see table above). More than half of today's CEOs have a graduate degree of some kind; no fewer than 93, or one out of every five, went to Harvard to get it. Columbia University placed a distant second, with 23 CEOs.

Do such strong showings by Harvard and Yale mean that American business is likely to draw CEOs increasingly from a small handful of schools? Perhaps. But no institution is likely to influence the American business scene to the degree, say, that the University of Tokyo influences the government of Japan. The U.S. higher-education system infuses American business with variety and diverse ideas and is one of the nation's enduring competitive strengths. America's rivals know it; that's why they send so many of their sons and daughters to study in the U.S. F

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These Pitney Bowes managers are taking varied paths on the way up.

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ABOVE: Managers from Quaker Oats pose for Paul Elledge (Outline).

COVER: Some candidates for the top ranks of Pitney Bowes, photographed by John S. Abbott.

"When companies flatten [their] organizations, that limits the number of rungs on the ladder, which lengthens the time between promotions." PAGE 38

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EDITOR'S DESK

JOHN S. ABBOTT

Susan Fraker, Alex Taylor, and a threatened Mercedes 500SL

NO ONE in American journalism gets inside the auto industry better than Alex Taylor III. In a cover story last year, Taylor revealed to FORTUNE readers the tensions between the Ford family and the auto company's top managers. More recently he disclosed hard figures showing that General Motors was losing thousands of dollars per car on some of its newest lines. Beginning on page 58 of this issue, he reports on the latest threat to U.S. auto companies: the Japanese invasion of the luxury car market. Taylor says, "German and American makers will get hit right where they are most profitable."

He was just finishing this article when another story broke on Taylor's beat. Gerald Greenwald, 54, long touted as Lee Iacocca's probable successor, quit Chrysler to lead an employee buyout of United Airlines. Taylor, who first met Greenwald nearly a decade ago, had interviewed him in April and sensed that changes were under way at Chrysler. With Kenneth Labich, our airline expert, Taylor promptly revisited Greenwald to explore his motives for changing jobs and where this leaves two famous corporations that are now at crucial turning points.

"I've learned a lot about cars from Alex," says Susan Fraker, who has edited nearly a dozen of his stories. "I encourage him to seek the human drama in the business—and there's much more of that than you might expect." You'll find plenty in the articles that begin on page 53.

■

With deep sorrow we report that Ethan Hoffman, 40, a superb freelance photographer, was killed last month while on assignment for us covering a story on indoor air pollution (page 86). He fell through a skylight at a school in Newark, New Jersey. Hoffman was, frankly, a favorite of our photo department, for his enormous personal warmth, his dedication to photojournalism, and his extraordinary talent. "The way his pictures were composed really told the story," says picture editor Michele McNally. "He always made you aware of the mind behind the camera." He shot four FORTUNE covers and worked on some 30 articles, producing pictures that ranged from a hilarious view of Sony's chairman in a bathtub to a ghostly, menacing photo of a nuclear plant swathed in fog. We will miss him greatly.

Ethan Hoffman at a Shinto shrine in 1986

Allan T. Demaree
EXECUTIVE EDITOR

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IS YOUR CAREER ON TRACK?

Forget the old rules. Promotions are coming more slowly. Lateral moves are in. But if you're trying for the very top, you still need to stick close to the P&L. ■ *by David Kirkpatrick*

GAUGING your career progress has always been more art than science, but what on earth are you supposed to make of the signals you're getting now? You haven't been promoted in quite a while, but then neither have many of your peers—at least not *really* promoted, though some have been shuffled into completely new areas. Out in the job market there's that clomping herd of baby-boomers behind you, or around you, or ahead of you. And as you fight your way up the corporate slope, you start to wonder if it's worth the effort. Maybe you should think about quitting, about becoming an entrepreneur like some of your former colleagues.

If you're confused, take heart. You are not alone. Figuring out where your career stands has never been harder. Says David Rhodes, 38, of the consulting firm Towers Perrin: "The rules are changing, but we don't know what they are yet." Palo Alto consultant Paul Leinberger, 42, echoes the thought: "What it means to be on the fast track today is quite unclear." And yet, from all the confusion, from the tumult of restructuring, globalization, mommy tracks, empowerment, and work teams, new wisdom is emerging to enlighten today's aspiring executives on what's really happening with their careers.

The most striking change in the rules of career progress: You may go years between promotions and still be doing just fine. Many managers are sitting in jobs longer regardless of their age, talents, or skills. Explains Rhodes: "When companies flatten organizations, that limits the number of rungs on the ladder, which lengthens the time between promotions." Susan Doten, 31, is director of marketing in Quaker Oats' pet food division, and she has moved quickly through six jobs in nine years. But the managerial pyramid has flattened so markedly that, she says, "I will hang out at this level for a lot longer than I hung out at the lower levels. There are about 13 marketing directors in U.S. grocery products, then only four vice presidents of marketing at the next level." Consultant Rhodes predicts that by 2000 the typical large corporation will have half the management levels and one-third the managers that it has today.

Promotions are slowing for another reason. Many companies that once moved the best and brightest on a fast track to a new job every 12 to 18 months are wondering if that isn't *too* fast. Says Blair Sheppard, 37, director of the human resource management research center at Duke's Fuqua business school: "American firms after restructuring are much closer to meritocracies than they used to be." And that means they want people to stay in place longer so it's clearer whether they succeeded or failed. David Hogberg, 37, a pet food marketing manager at Quaker, encountered this phenomenon early. In 1982 he was working his way up the ladder in the company's manufacturing operations, getting promoted roughly every year. Then he became manager of manufacturing for Kibbles 'n Bits dog food, and his boss decided to keep him there three years. He looks back: "It seemed like an eternity, but this was a big job, with 70 people working for me. I trusted that in the long term it wouldn't be a career setback."

IT WASN'T, and he thinks no other path would have taught him what he learned: "I got to see the effects of changes I made and work through their implications. It helped me learn to approach every job as a long-term opportunity, to stand back and ask what changes we need to make in this whole picture, even if it has been done one way for the last 15 years."

If you can't move up right away, you can sometimes move across, and this may be a smart idea. As Doten of Quaker Oats puts it, "I may eventually have to move to another area to grow myself." Growing yourself makes sense because the future corporate honcho will be a generalist—not a production or finance or marketing person, but a people person, more a leader than a master of any one discipline. Says recruiter Henry de Montebello, 44, of executive search firm Russell Reynolds Associates: "In the future everybody will have strategic alliances with everybody else, and the executives who thrive will be well-rounded. You can't be a specialist at senior levels anymore."

Anne Pol, 42, of Pitney Bowes buys that message. Five years ago, after a career spent mostly in human resources, she left a senior position in that function to run a plant that makes parts for mailing machines. She considered herself a candidate for the company's highest jobs but knew she needed solid operating experience to have a reasonable shot. Then she came back to the top personnel job and a position on Pitney Bowes's 11-person corporate management committee, but only on condition she could go back to operations later. This spring she returned to the heart of the company, as vice president for manufacturing operations in the mailing systems group. Her conclusion: "It's very obvious that lateral moves are necessary if you want to progress up the corporate ladder."

Quaker's Hogberg similarly believes he has maintained his promotability to top levels only through a series of lateral moves. Af-

CLIMBING THE LADDER, THEN AND NOW

Organization Man	Today's Manager
■ Every career move was supposed to be upward.	■ Lateral moves are becoming routine and even desirable.
■ Promotions came within two years.	■ Jobs last longer. Responsibilities evolve with no title change.
■ Personal feelings were secondary to corporate harmony.	■ It's acceptable to speak out and try to reshape the organization.
■ Success meant job security all the way to retirement.	■ Success means inner fulfillment and money.
■ Good pay was your age times $1,000.	■ A good pay package includes an equity stake or profit sharing.
■ The workweek was 40 hours, with evenings and weekends for family.	■ Work lasts until the job is done, however long it takes.

These Quaker Oats managers still smile despite sideways moves and less frequent promotions. Pet food marketers Susan Doten and David Hogberg flank assistant treasurer Janet Cooper.

PHOTOGRAPH BY PAUL ELLEDGE—OUTLINE

REPORTER ASSOCIATES *Wilton Woods and Richard S. Teitelbaum*

JOHN CHIASSON

"We want a creative person who can decide and act." —AT&T's Harold Burlingame

ter his extended stint manufacturing Kibbles 'n Bits, he sidestepped into product development rather than vie for a plant superintendent's job. Three years later, repeating the pattern, he opted out of a senior product development post in favor of a move into marketing, as assistant brand manager for Cap'n Crunch cereal. He had to work extra hard to get promoted to his current job as manager of marketing for all "semi-moist" pet foods (such as Gaines Burger) but has no doubt his earlier experience gave him an edge. "I generally look up the ladder about two positions and ask where I would go from there," he says. "If I had become a director of product development, it would have been a dead end for me from a career standpoint. My lateral moves have been deliberate, and they worked. The only problem is that now I look about 50 instead of 37."

IF ASSESSING your accumulation of job titles is more complicated than it used to be, surely you can still get a quick read on your status by checking your salary—can't you? Not so fast. For the organization men of the Fifties and Sixties, the longstanding rule of thumb was that you were doing okay if you earned your age times $1,000. Today you can't go by such simple rules—even adjusted for inflation. For one thing, people prefer compensation in different forms than they used to. They are more likely to want a piece of the business, or profit sharing. "It's give me money or give me equity," says de Montebello. "People will take extraordinary risks in their careers for equity."

By contrast, the perks so cherished by organization men no longer carry as much weight. In typical boomer voice, a 30-year-old middle manager at a big Manhattan public relations firm says, "All those executive dining rooms and bathrooms generally just satisfy somebody's ego. I'd rather have cash in hand than spend it to take a limo from point A to point B."

In general, after accounting for inflation, rising managers today make about as much as or perhaps a bit more than they did two decades ago. But headhunter de Montebello states an opinion advanced frequently by human resources experts: "There's no formula for how much you should make. The test is, Where are your peers? If your classmates, the people you started with, are all group VPs and you're an assistant controller, there's a discrepancy. But then you may be a serious tennis player and having more fun."

Comparing your achievements with those of your peers is harder than it used to be because the number and nature of your cohorts may vary enormously, depending on your age. Managers of all vintages worry about the career impact of 78 million baby-boomers surging through the work force. But whether *you* have reason to worry depends on how old you are and with which group of baby-boomers you are competing.

Just because boomers all grew up listening to the Beatles and Rolling Stones, that doesn't mean they all sing the same song today, especially when it comes to career attitudes. After all, they were born over a 19-year period. Edith Weiner, 41, of the Manhattan trend analysis firm Weiner Edrich Brown, credibly argues that boomers should be divided into three subgroups.

The leading edge is the so-called Woodstock generation, who were roughly 18 to 23 in 1969 and are 39 to 44 today. This group pioneered emancipated styles of life in their youth, helped initiate the women's movement, and fought against—or in—the Vietnam war. When they entered the job market the economy was, aptly, booming. There were ample entry-level slots for them, and their attitude reflected a certain cockiness because they felt they had changed society. When it came time to buy a house, by today's standards it was easy to afford.

The second group, today about 33 to 38, didn't test social barriers nearly so hard. Yet they were affected enough by the freewheeling Sixties to have felt considerable confusion about career goals, and typically they didn't decide until relatively late what they wanted to do. They took their first stab at the job market during or after the recession of the mid-Seventies and began to feel a competitive squeeze for jobs and housing.

By the time the third wave of boomers, now 26 to 32, emerged from school, competition was so keen in both job and housing markets that economic success became the consuming goal in their lives. This is the tough group that helped define the word yuppie and that unashamedly sought megabucks at a tender age on Wall Street.

WHILE NO objective evidence demonstrates that these last are stealing promotions from older boomers, the first two groups are definitely hearing footsteps behind them. And they don't like it. A successful 43-year-old who runs two business units and manages 150 people at a major money center bank is leaving her job, partly, she says, because of the competitive pressure she feels from young MBAs. The woman, who started 22 years ago as a secretary to a branch manager, complains: "These 1980s graduates we call yuppies are incredibly aggressive. They will lick your shoes to get you to do something for them. And once you do they'll forget your name. These little twits are coming in and eating our lunch."

For all the pressure they feel, the early boomers still have a demographic advantage over the legions that trail them. Thanks to the birth dearth of the Depression and World War II, relatively few older managers

STEVE WINTER

"People today consider themselves to be in constant change." —Edith Weiner

stand in the way of boomer promotions to the high-level jobs that survive. In addition, many older executives are bailing out well before age 65, lured by entrepreneurship and fat retirement packages, or are being restructured out. Guess who will fill their positions? In some reviving industries the older generation of managers was so decimated by cutbacks in the Eighties that boomers face truly extraordinary opportunities. At companies like Bethlehem Steel, Caterpillar, and Navistar International, their careers could thrive.

YOUNGER BOOMERS who haven't yet received the promotions they feel they deserve may also benefit as their more successful comrades, who got the early promotions, move further up in the hierarchy. That's because of the birth dearth that followed the boom. Says Sylvester Schieber, 43, the optimistic director of research for the Wyatt consulting firm: "The people at the back end of the baby boom will be more likely to get these fill-in promotions. You only dead-end if you go to sleep at your desk." In short, the youngest and oldest boomers find a career advantage in being adjacent to a birth dearth. Those stuck in the middle, with masses of peers above and below them, face a tough slog the rest of their lives.

One of the most important changes in the career picture, affecting not just baby-boomers but all ages, is occurring not around today's managers but inside them. Personal fulfillment and the flexibility to do more of what one wants are becoming top-rank career goals. Says Pitney Bowes's Anne Pol: "The key issue for people today is getting satisfaction in your work and feeling that you are making a contribution." It's a feeling people have always sought. But earlier generations were more willing to suppress this desire in return for other rewards, primarily job security. For all their careerism, many baby-boomers, steeped in the heritage of the Sixties, are decidedly ambivalent about compromising personal goals in

ANDY FREEBERG

Peggy Clarkson mothers two children, manages six IBM marketers, and loves her career—for now.

"U.S. firms are closer to meritocracies than they used to be."

—Blair Sheppard

GORDON NORDEN

CRAIG BLANKENHORN

"The rules are changing, but we don't know what they are yet."

—David Rhodes

"Go get the education to increase your flexibility on the job."

—Judith Bardwick

RISING AT PITNEY

■ Pitney Bowes is working hard to provide career paths that keep its best managers happy as they zigzag upward. The seven on our cover (and below), who range in age from 29 to 47, are among those the company believes have potential for top positions. Some have taken lateral moves and switched disciplines to broaden their experience.

Several started their careers outside business altogether. John Curtis, who runs the company's operations in Britain, studied anthropology and taught high school before going into marketing. David Rupert was a U.S. Senate staffer, a Vista volunteer, and a worker for a mental health agency before joining Pitney Bowes in 1982. Says he, sounding like many baby-boomers: "I don't have a burning desire to be CEO. It seems too far away. The most important thing is to be successful at what I'm doing today."

Upwardly mobile Pitney Bowes managers, clockwise from lower left: Lisabeth Todd, a district sales director; John Curtis, in charge of U.K. operations; Jerry Dalton, a regional VP; Ernest Jackson, a division sales VP; Charlene Malone, a sales VP; Barbara Gaither-Shockley, a treasury manager; and David Rupert, a regional VP.

JOHN S. ABBOTT

pursuit of a job somewhere up there in the corporate empyrean. Consultant Leinberger observes: "The baby-boom generation places creativity and self-expression at the center of their being. They view themselves as walking works of art." This ethos has extended to managers of all ages. As one navigates corporate America, one can almost hear the voices crying, "Don't fence me in!"

If independence, control, stimulation, and a feeling of satisfaction are what people increasingly crave, few profess to care about their title. Says Burke Stinson, 48, a public relations manager for AT&T: "Folks are less concerned about the trappings than if the job itself is rewarding, the company progressive, and the environment comfortable—does it nurture me as a guy or gal on the way up?"

Employees often complain that when they learn more and broaden themselves, the company doesn't notice.

Janet Cooper, 36, relishes her job as Quaker's assistant treasurer because she finds the changing capital markets exciting. "I could take another job and make more money," she says. "But it would be a trade-off for doing something less interesting each day." George Foyo, 43, a sales vice president for AT&T's national accounts who just returned from a four-year general management assignment in Spain, feels the same way: "I'm very strongly motivated by change and challenge. Compensation and title are less important."

This resistance to categorization also expresses itself in a sense, sometimes disquieting, of being endlessly in motion. "People today consider themselves to be in a constant state of change," says Edith Weiner. Are you married? Currently. Do you have children? Not yet. Consider the highly satisfied Peggy Clarkson, a cheery 38-year-old who, thick appointment book always at her elbow, manages a staff of six marketers for IBM in Norwalk, Connecticut. How does this 16-year Big Blue veteran and mother of two feel about her career? "Right now I'm very happy in my job," she says. "I love it. It allows me to balance career and home very well." Right now.

Managers are seeking deeper satisfaction just when many employers are less likely to give them the wider and more rewarding responsibilities that come with a promotion. Something's got to give, and it may take the form of managers bailing out, or of companies changing policies in an effort to keep them. Says a 32-year-old man who left IBM in 1988 after eight years to join a small software company: "In a big company you're always trying to avoid the brick wall. Now my status depends on how I perform. I don't care about my title. I'm looking for a challenge."

Smart companies trying to retain such people are finding ways to create more challenge and satisfaction for managers who otherwise might feel stuck. AT&T senior vice president of human resources Harold Burlingame says, "We are starting to have broader bands for people. Instead of getting a $10,000 raise and moving on, they can earn much more within a job as they grow in and grow their business." At IBM, where restructuring eliminated 6,200 of 34,000 management jobs in the U.S. between 1986 and 1989, those that remain have more autonomy, at least according to higher-ups. Says Dick Hallock, director of employee relations for IBM: "We're driving responsibility down so that within each job there's more room for growth and development. In some areas we use the slogan, Make it your business."

But companies aren't attacking the problem sufficiently. Indeed, employees often complain that when they learn more and broaden themselves, the company doesn't notice. Quaker human resources vice president Robert Montgomery, 43, says that "plateaued" managers are bailing out, and his company, like others, isn't yet doing enough to keep them.

CAREER-CONSCIOUS women face a whole additional set of considerations. No independent career expert interviewed for this article denies that a glass ceiling curtails corporate advancement for women, and most volunteer it as one of the most important factors shaping the future of today's managers. Yet a substantial number of experts also believe that women's careers may thrive in the corporate environment of the future. Neil Yeager, 37, who recently wrote *Career Map: What You Want, Getting It, and Keeping It*, says, "Women know how to network in a less politicized way. They know how to nurture relationships and empower other people. They manage groups better

than men. And they have a greater appreciation of motivations other than money." Those are just the qualities companies will need in the Nineties.

WITH THE STRUGGLE up the ladder especially trying and confusing for today's managers, it's little wonder that many seem particularly interested in an ancient question: Just what, finally, is career success anyway? Judith Bardwick, 57, a La Jolla, California, consultant, insists that there are other ways to cope with nonpromotion than to feel that you've failed. "Don't sit in the corner and suck your thumb," counsels a stern Bardwick, who proffers similar advice in seminars to employees at companies like BellSouth, Kraft General Foods, and Pacific Gas & Electric. To address those feelings without quitting, she suggests, "take your ambition to another area of life. Get involved with your local school board, for example. Or go get the education to increase your flexibility on the job."

But what if you continue to track your career progress the old-fashioned way—by how close you are to the top job? After all, *someone* is going to be CEO of your company in 15 years, and many companies try to identify and cultivate the likeliest candidates early. Presuming you would like to be among them, here is what AT&T, for one, is looking for, according to Burlingame: "We want a creative person who can decide and act, who can operate a continuously learning organization where the leader and his or her people constantly try to improve. We want a sense of courage, and also someone who can motivate."

MANAGERS RATE THEIR COMPANIES, THEN AND NOW

My company is above average . . .	1959	1989
. . . in advancement opportunity	57%*	40%
. . . in job security	78%*	69%
. . . as a place to work	80%	68%
. . . in job satisfaction	92%	87%

*Data are from the early 1960s.

SOURCE: OPINION RESEARCH CORP. EMPLOYEE ATTITUDE DATA BASE, PRINCETON, N.J.

While corporate backwaters still exist—often in human resources, public relations, and legal, among others—even fast-trackers will occasionally find themselves spending a brief time in one. "Both line and staff jobs will be expected for the CEO of the future," says IBM's Hallock. International experience will surely be a plus as well, he says.

But staying close to profit and loss responsibility remains the most important talisman for those with their eyes on top management. Says author Yeager: "For getting to the top, the bottom line is still the bottom line." Seek such responsibility early, and try to ensure that the results you produce for the company can be measured in dollars and cents.

Beyond that, IBM's Hallock offers this advice: "Take the initiative in your own development. Learn new things. Read widely. Absorb as much as you can, whether or not it's related to your current job, so you can put it into context. You've got to understand the mission objectives of your employer and relate your own efforts to the company's overall goals."

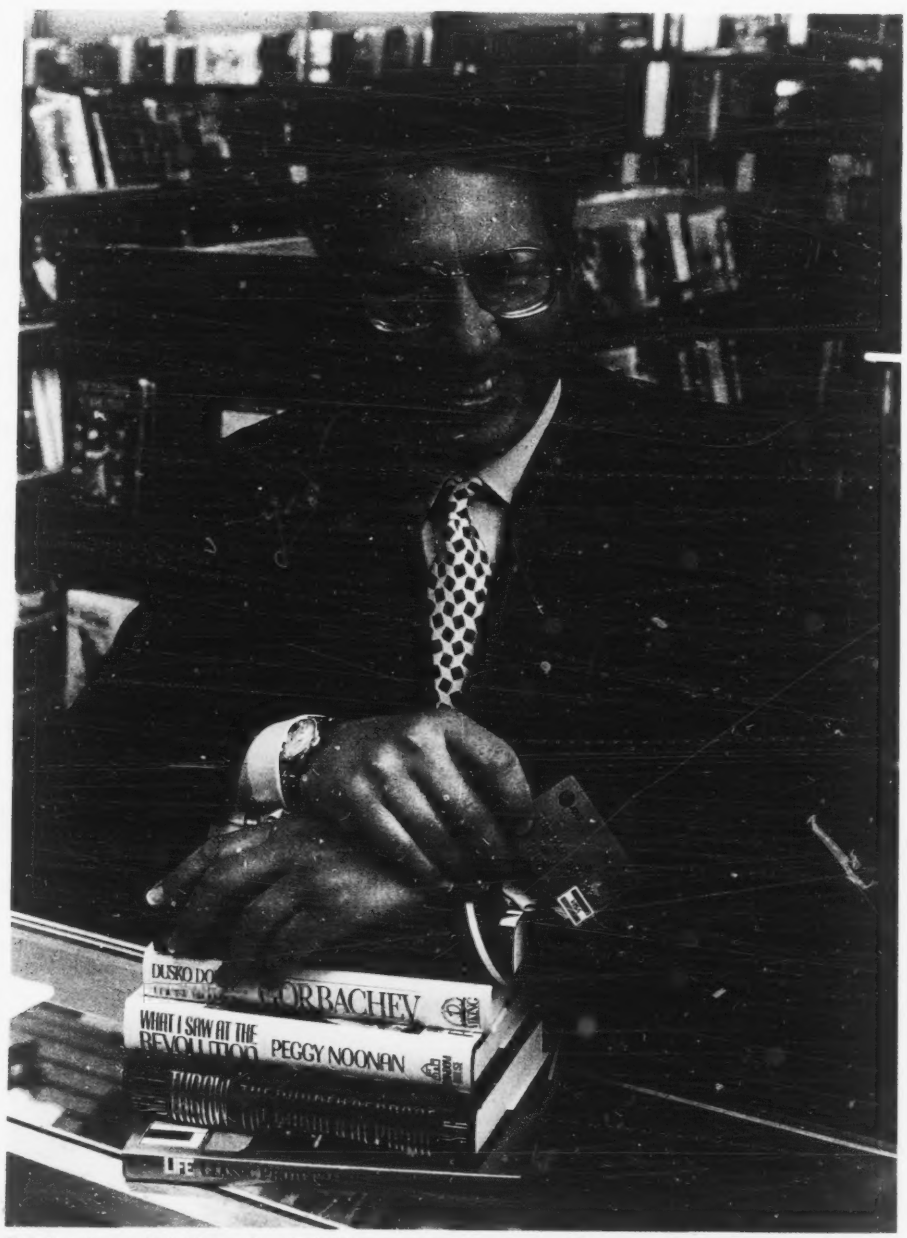
All of which may or may not work. Since companies generally need just one CEO every seven years or so, remember that proximity to the pinnacle is only one way to judge a career, and that there is another, which applies to the chief and everyone else. Listen to Philip Seiden, 55, an IBM physicist who voluntarily withdrew from a senior management position 15 years ago to concentrate exclusively on research into such matters as galactic structures: "If you haven't made it in society's eyes, who cares? Have you made it in your own eyes? That's what really matters. If you're happy, why do more? To satisfy your mother-in-law?" Some version of Seiden's career path will probably be replicated by increasing numbers of today's managers. With luck, so will his attitude.

ANDY FREEBERG

IBM physicist Seiden opted out of management to focus on research. He doesn't regret the move a bit.

WHO'S WINNING THE CREDIT CARD WAR

You are. It's hard to find a more lucrative business than those plastic debt machines, but new players are forcing the whole industry to give consumers more for less. ■ *by Bill Saporito*



Reading the market: The no-fee AT&T Universal Card, under Paul Kahn, has shaken the competition.

IT WAS TOO GOOD TO LAST. If you are in the charge card business, you make money six ways from Sunday. If you run a bank, you might get more profits from charge cards than from all other sources combined. If you're Citibank, you made $3.6 billion just in credit card interest last year. Numbers like that attract new players—and here they come. As the Sears Discover Card grows fast, Japan Credit Bank has landed with its own card in the West, and now Big Mama, AT&T, is threatening to knock the industry silly with a card that offers gold-plated service yet charges no annual fee. The party is apparently over.

White-hot competition in the credit card business is wonderful news for consumers, as the industry pampers them with new services and incentives to use their cards everywhere and for everything, including movies and fast food. Parking lots, highway tolls, and even school lunches may be next.

It is not necessarily so wonderful for the card issuers, mainly the banks that own the Visa and MasterCard organizations, plus American Express, Sears, and the new entrants. They must ante up to provide the extras while perhaps lowering the amounts they charge. This double whammy is forcing consolidation in the business. Banks with middle-size portfolios, 500,000 or so cards, are finding the demands to be too much and are selling out to bigger players.

The intensifying competition comes as just about everybody who is creditworthy (or sometimes isn't) already has cards. "The easy growth in acquiring card members has disappeared," says Charles T. Russell, CEO of Visa. With more than 260 million cards in circulation, the average American adult sports nearly three for his purchasing pleasure. Last year charge volume grew at 20%, which in this business is considered a comedown. "It's a market share game," says Thomas R. Butler, chief of Sears Roebuck's

REPORTER ASSOCIATE *Mark D. Fefer*

PHOTOGRAPH BY SHONNA VALESKA

surprisingly successful Discover Card operation. "We entered the business with just that perspective."

So how do you build market share? One way is simply by buying the other guy's customers. Citi and its competitors are purchasing the credit card portfolios of S&Ls and other troubled financial institutions at a rapid clip. Last year Chase Manhattan spent about $2.3 billion to acquire five portfolios, including those of Bank of Boston and Meritor Savings. The frenzied buying has sent prices through the ceiling. Citibank recently paid the equivalent of $268 per account, one of the highest prices ever, for the portfolio of the struggling Bank of New England.

The other way to raise market share is to differentiate a card by hanging more services on it, lowering its price, or both. To that end, the banks latched on, with mixed results, to so-called affinity cards issued in conjunction with frequent-flier programs, sports teams, and service organizations.

It's a tricky game, and American Express plays it best. It has two kinds of cards—the well-known travel and entertainment cards (green, gold, and platinum) and a bank credit card called Optima. Last year the company raised the annual fee on the standard green card 22%, to $55, and priced its gold card at $75 (up from $65)—and heard barely a whimper from the membership, the company says. The premium platinum card remained at a nosebleed $300. "Our prestige ratings from customers are the highest they've ever been," says Edwin M. Cooperman, CEO of Amex's Travel Related Services Co., the shining star of this tarnished company. But Amex is hardly sanguine about it. The company is pouring more than $100 million into revamping its business to get to what Amex officials call the next generation of service: more of everything.

In essence, Amex is making the game more costly to play. and other competitors are going to have to pay up or get out. Over the past five years Amex has introduced services at the rate of about one a year. The company in 1986 introduced Buyer's Assurance, a plan to extend warranties up to an additional year. It added car rental collision insurance in 1987, insured the people and things inside the car in 1988, and offered medical monitoring and evacuation services last year. In some cases, such as rental car insurance, the company first offered services to gold- and platinum-card members and then pushed them down to green-card holders when the competition matched them.

One reason AT&T so frightens the card industry is that it is attacking strongly on both price and service. Price, or lack of it, is the company's entry strategy. Credit card issuers

HOW THE CARDS STACK UP

Below is a list of selected features included with membership. Gold card offers the standard features plus extras.

	Standard			Gold		
CARD ISSUER	ANNUAL FEE	% RATE	FEATURES	ANNUAL FEE	% RATE	ADDED FEATURES
AT&T	$0	Prime +8.9%	90-day purchase insurance against loss, theft, damage, etc.; warranties doubled up to a year; $100,000 travel accident insurance; rental car insurance; 10% off AT&T long-distance calling card rates	$0	Prime +8.9%	$250,000 travel accident insurance; Visa Emergency Assistance, which provides medical monitoring and referral, arranges emergency transport, and advances funds for treatment
CHASE MANHATTAN	$20	19.8%	90-day purchase insurance; warranties doubled up to a year; $250,000 travel accident insurance; rental car insurance	$50	16.5%	Credit card registration; $350,000 travel accident insurance; either Visa Emergency Assistance or MasterAssist travel emergency service, which arranges and pays for medically necessary travel and treatment
CITIBANK	$20	19.8%	90-day purchase insurance; warranties doubled up to a year; $100,000 travel accident insurance; discounts on Hertz car rentals	$50	16.8%	$350,000 travel accident insurance; credit card registration; CitiAssist travel emergency service, which advances funds for medical and legal help, arranges and pays for medically necessary travel
FIRST CHICAGO	$20	Prime +9.9%	$100,000 travel accident insurance; guaranteed hotel reservations	$20	Prime +9.9%	90-day purchase insurance; warranties doubled up to a year; $250,000 travel accident insurance; rental car insurance; MasterAssist or Visa Emergency Assistance
AMERICAN EXPRESS	$55	None	90-day purchase insurance; warranties doubled up to a year; $100,000 travel accident insurance; guaranteed hotel reservations; rental car insurance; cash advances and referrals for medical and legal aid	$75	None	Year-end summary of charges; personal insurance covering car renters; seating for cultural events
DISCOVER	$0	19.8%	$500,000 flight insurance; 24-hour tow truck referral service; cashback bonus of up to 1% of amount charged			Gold card not available; "Private Issue" card being tested

earn money three ways: fees charged to customers, interest from outstanding credit balances, and the "discount" charge they assess merchants on each purchase. This handy operation produces gross profit margins before taxes in the 50% range—nice work if you can get it. AT&T, like Sears, is simply willing to earn less. Paul G. Kahn, president of AT&T Universal Card Services, says what the industry doesn't want to hear: "There's room in this business to give something back to the customers." Although lots of banks offer no-fee Visa and MasterCards, AT&T is the first mass-marketer to do it and the only one with the swag to fund a national ad campaign.

IN ADDITION to taking less, AT&T's card masters are willing to offer consumers as much as or more than the competition, even the high-priced gold cards offered by Visa, MasterCard, and Amex, which originated the golden idea. (In fact, AT&T first approached Amex with a proposal for a joint card. "Wrong number," said Amex.) "They are shooting a hole right through the gold-card upgrade," says Joseph Wallace, an industry consultant. AT&T Universal cardholders get purchase protection against loss or breakage, an extended warranty on what they buy, travel insurance, rental car insurance—pretty much what the other cards supply—*plus* a 10% discount on long-distance calls.

The company is also offering instant credit on disputed charges and promises to be an ombudsman for the consumer in those cases. Kahn sounds the battle cry: "We are raising the bar on service quality. We are doing everything faster than the others, handling transactions on the phone rather than in writing, taking the customer's side in disputes, and not requiring a lot of bureaucracy. We are providing one phone number to call for everything, not a dozen like our competitors."

AT&T's initial execution has been brilliant. In one move the company has offered a product with a distinct name that consumers can remember, AT&T Universal, along with a marketing strategy—free *for life*—that consumers are finding irresistible. Within days of the card's announcement, calls were pouring into AT&T's offices at a peak rate of 15,000 an hour. The company expects to be among the top-ten issuers by the end of the year, meaning that AT&T will hand out more than three million cards.

Creating a superior service organization is a monstrous challenge, but AT&T brings some built-in advantages. It has access to the credit histories of 70 million AT&T long-distance customers. By qualifying these potential credit customers in advance, the company responds quickly to inquiries and lowers its vulnerability to bad credit risks. The heart of the service system is a phone information network. Custom workstations allow service representatives to flip among four computer systems, one of which can pull up images of application and transaction documents. By year-end a computer will call up a customer's account the moment he phones.

With AT&T and Amex adding service, while AT&T also lowers the price, pressure on the banks is growing. The top-ten banks (including those run by Amex and Sears) control more than 50% of the bank card market. "You see the banks having to compete in the one area they can least afford to compete in—price," says Cooperman of Amex. With an average interest rate on outstanding balances of about 19%, credit card portfolios represent a lone rose amid a thicket of thorns for big banks. Not only did Citibank's credit card operation ring up that huge $3.6 billion in interest last year, but it also collected $500 million in card fees. According to the *Nilson Report*, a leading industry newsletter, about 70% of Citi's and Chase Manhattan's net profits come from credit cards. Another top-ten issuer, MBNA, formerly Maryland Bank N.A., creams more than 50% of its earnings from credit cards. As consultant Joseph Wallace points out, "The banks are high-priced competitors selling a branded commodity. AT&T has changed all that. Its entry is devastating to the banks."

SO FAR the big banks' only response has come through lawyers. Citicorp, MBNA, Chase Manhattan, and BankAmerica have filed petitions with the Federal Communications Commission and the Federal Reserve Board that question the legal standing of AT&T's banking partner, Universal Bank, a subsidiary of Synovus Financial Corp. AT&T says the allegations have no merit. But where it really counts—at the point of purchase—the banks have not counterattacked.

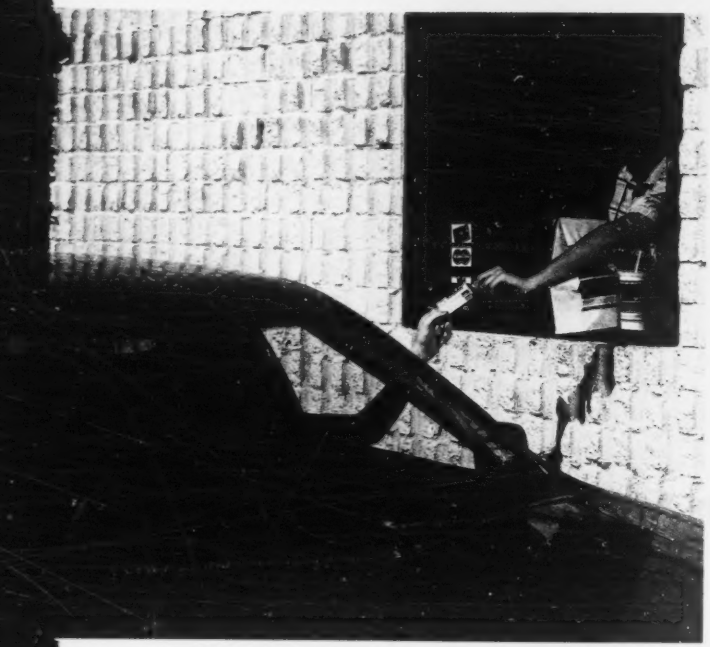
As for Visa and MasterCard, the umbrella organizations that the banks support, their main job in this battle is marketing—differentiating themselves in a more crowded industry. They are trying hardest to build a fence between themselves. But after years

THE BANKS BETTING BIGGEST ON CREDIT CARDS

BANK	CREDIT CARD RECEIVABLES (in billions)	1989 NET CHARGE-OFFS TOTAL (in millions)	1989 NET CHARGE-OFFS AS % OF RECEIVABLES	NUMBER OF ACCOUNTS (in millions)
CITICORP	$23.0	$1,000	4.3%	22.0
GREENWOOD TRUST (Discover)	$8.5	$182[1]	2.1%	18.3[2]
CHASE MANHATTAN	$7.6	$208	2.7%	9.0
FIRST CHICAGO	$6.4	$151	2.4%	6.2
BANKAMERICA	$6.0	$148	2.5%	6.5
CENTURION (American Express)	$5.9[3]	$278[1]	4.7%	6.1[2]
MBNA	$5.5	$20	0.4%	4.5
BANK OF NEW YORK	$3.3	$86	2.6%	2.5
BANC ONE	$3.2	$68	2.1%	4.0
MANUFACTURERS HANOVER	$2.8	$108	3.8%	2.4

[1]Source: Credit Card Management. [2]Estimate. [3]Includes only receivables for Optima and other lines of credit.

The Discover Card's Thomas Butler: "It's a market share game."



BLAKE LITTLE

Card issuers' newest targets are fast-payment settings—theaters, tollbooths, fast-food outlets like this one in Phoenix.

of me-too marketing, consumers perceive little difference between the cards, leaving the two companies a tough communication task.

MasterCard, the smaller of the associations with 86 million cards, is trying to position the card as the best for mainstream America with its "Master the Moment" campaign. In doing so, MasterCard is downplaying the extravagantly high-living themes of Visa and Amex that typically picture card members casually dropping in on spas in the Swiss Alps as if they were Holiday Inns in Duluth.

Visa, with 120 million cardholders, is ticketed for Fantasy Island, in direct competition with American Express. Ads tout the exotic spots and tony shops that accept Visa but not American Express, a not so subtle way of telling consumers that Visa is accepted in more locations than Amex.

AT&T's roaring takeoff has drowned out the noise being made by the Discover Card, introduced by Sears' Dean Witter subsidiary in 1986. With 34 million cards in circulation, Discover claims 6% of the market and produced $80 million in earnings for the beleaguered company last year. The card is now accepted in more than a million U.S. locations. The Discover attraction? Solid value: no fee and a rebate to the customer up to 1% of every dollar charged. Although the rebate is a bit of a come-on—a $1,000 balance nets a consumer $2.50—the public clearly appreciates getting *something* for nothing.

Like AT&T, Discover's advantage going in was a list of creditworthy customers—70 million Sears charge-card holders—plus an existing credit card operation infrastructure at Sears. Discover's cost of acquiring a new cardholder was and is about $6 a pop, while for the rest of the industry it is $25 to $80 and rising. "People would kill to have our acquisition costs," says Butler. But other

MINIMUM INVESTMENT.

COMPARE THESE FEATURES	Mazda 929S	Acura Legend LS	Lincoln Continental
Engine (size/type)	3.0 liter/V6	2.7 liter/V6	3.8 liter/V6
Horsepower (SAE net @ rpm)	190	160	140
4-speed automatic transmission	•	optional	•
Drivetrain	rear-wheel	front-wheel	front-wheel
Anti-lock Brake System (ABS)	•	•	•
Automatic climate control	•	•	•
AM/FM/cassette stereo system	•	•	•
Basic warranty (months/miles)	36/50,000	36/36,000	12/12,000
EPA interior/cargo room (cu. ft.)	96/15	95/14	104/19

• standard

For just $385* per month, the Mazda 929S lease plan yields significant dividends. You'll enjoy the responsive 190-hp V6, and the security of an Anti-lock Brake System (ABS). Its elegant interior is matched by the comfort of a 36-month/50,000-mile warranty.**

It's a special offer available at your nearby Mazda dealer right now. So lease the new 929S. You'll realize the returns every time you turn the key.

*Five-year closed-end lease offer. 60 equal monthly payments of $385.39. Total Payment of $23,123.40. Payments based on negotiated Agreed Value of MSRP for 1990 929S ($24,800) plus transportation fee and customer capital reduction of $4,400. Final Agreed Value set by dealer. Registration fees, state and local taxes, insurance, options, license not included in Agreed Value. Lease subject to approval of Mazda American Credit at participating dealers and car availability. Mazda American Credit offer not available in Hawaii. First month's payment, refundable security deposit and $4,400 capital reduction contribution to be paid at the beginning of lease, plus applicable taxes, registration and title fees.

companies would rather not have Discover's portfolio, since Discover cardholders tend to rack up fewer bucks on their plastic. Butler says it's just a matter of time before Discover holders show the same profile as Visa and MasterCard holders.

WITH 17% of the bank card business, Citibank has the most to lose from the threats posed by AT&T and Discover, and the company is busily trying to market its way into customers' hearts. Since 1987 the company's advertising has beat the drum of "Not just MasterCard . . . *Citibank* MasterCard." Like AT&T and Amex, Citi believes its service will keep customers from deserting. Says James L. Bailey, a Citi group executive: "The credit card customer is more service sensitive than price sensitive." Bailey openly wonders whether AT&T's price strategy will buy it a low-rent customer, one less likely to maintain an account balance that earns interest fees.

The backbone of Citi's 34% compound annual growth in receivables through 1989 has been its strategy of giving a card to just about anybody who asks for one. The company is spending madly to acquire new cardholders by flooding the market with applications: Some 700 million mail solicitations went out last year. "Why do people drink Coca-Cola?" asks Bailey. "Because it's everywhere." The strategy has a cost. Citi is willing to charge off 4% of its outstanding debts, about $1 billion in 1989, as uncollectable.

With new U.S. customers getting harder to snag, much of the industry's future growth must come from getting customers to use cards in new places. Bank cards are used an average of only 2.3 times a month, a rate that hasn't changed much since 1970. Says Visa CEO Russell: "We have no penetration in fast payments—fast food, tolls, movies. There's no time for ka-chunk ka-chunk and getting approval on the phone."

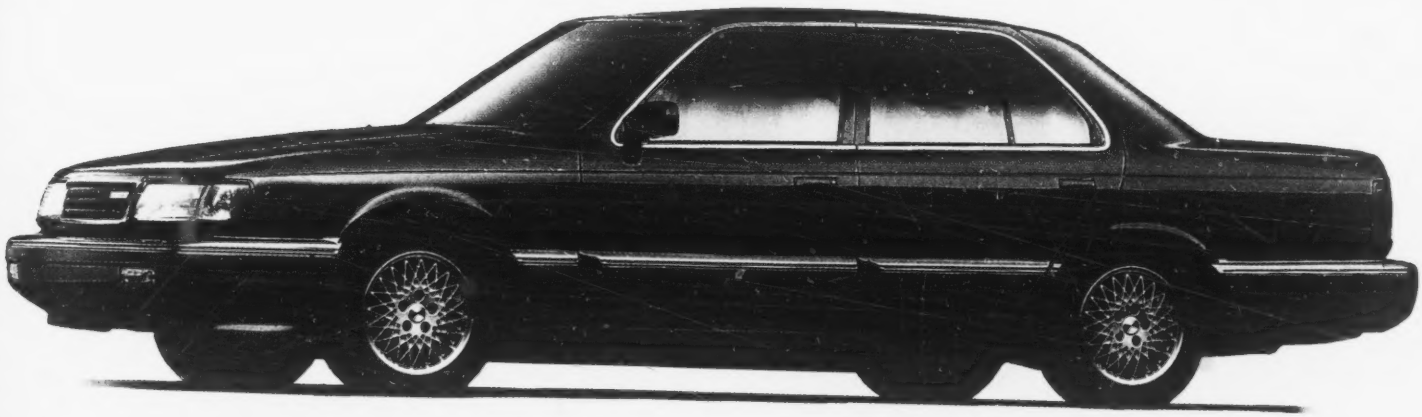
So Visa and Master are working on systems that short-circuit the standard verification procedure. At a test in a Burger King in Oregon, MasterCard successfully tried a system that gives seven-second authorization for purchases and requires no signature. That's faster than a cash transaction—and the charge customer typically spent twice as much as the cash customer. Such a quick payment system could do the same everywhere for small purchases.

Even Amex is in the game, rapidly expanding the number of retailers that accept the card. The hot rumor is that Amex desperately wants privileges at Wal-Mart. Amex says it wants to be accepted wherever consumers want it, including Wal-Mart. Discover, however, recently beat Amex to the punch.

Looking further ahead, credit card companies see magnificent opportunities around the world. They are positively drooling over Europe. Compared with the U.S., Europe is virgin territory, where most consumers wouldn't think of paying with anything but cash for big as well as small purchases. Sales there increased twice as fast as in the U.S. last year, and the number of merchants who accept cards has been increasing rapidly.

The Europeans are lucky. Americans had to put up with high fees and so-so service for years until the competition caught up. But now the cardholder is the boss, and the industry will be better off for it. F

MAXIMUM YIELD.



required under local law. Purchase option available before lease end for Initial Lease Balance less depreciation credited, or at expiration for Estimated Wholesale Value of Vehicle, plus, in either case, a purchase fee and any official fees or taxes. Lease based on a total of 65,000 miles. At lease expiration, lessee liable for return fee and per mile excess charges at 10 cents per mile. See lease agreement for full details. **See your Mazda Dealer for limited-warranty details. © 1990 Mazda Motor of America, Inc.

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A BRIGHT FUTURE FOR CONSERVATISM

American CEOs describe themselves as a pretty right-thinking group, and most of them believe the country is trending their way. One reason: the graying of the baby boom. ■ *by Susan Caminiti*

THAT TOP chief executives see themselves as conservative may not bowl you over, but you may be surprised by the extent. Almost three-quarters of those participating in the latest FORTUNE 500 CEO poll described themselves as strongly or somewhat conservative. By contrast, not one said that he was strongly liberal. Only 8% reported that they were somewhat liberal, and 18% identified themselves as centrists.

The CEOs are most conservative on economic issues: Regarding taxes, government spending, and trade, 87% describe themselves with that label. But the group is less sure of conservative solutions when it comes to such social policies as welfare, abortion, and child care. Here, a surprising 27% of the respondents say they are somewhat liberal (1% strongly liberal); 31% report themselves to be centrists, and 40% maintain their conservatism. Which of the two political philosophies will dominate the decade? Conservatism will rise, say 57% of the CEOs polled, but 31% believe that liberalism will make a comeback.

These are among the findings of the FORTUNE poll. The opinion research firm Clark Martire & Bartolomeo conducted the survey between May 7 and May 16. Respondents were 204 CEOs of FORTUNE 500 and Service 500 companies. Do they believe that their philosophies represent the mainstream? Yes and no. Nearly half say that the political views of the nation are similar to their own. But a slightly greater number feel that the rest of the country is more liberal than they are.

REPORTER ASSOCIATE: *Antony Michels*

Q A

Overall how would you characterize your political views?

Strongly liberal	0%
Somewhat liberal	8%
Centrist	18%
Somewhat conservative	64%
Strongly conservative	9%
Not sure	1%

Q A

In general, do you think the political views of the nation as a whole are basically to the left of your own views, basically similar to your views, or basically to the right of your views?

To the left of your views	46%
Similar to your views	45%
To the right of your views	8%
Not sure	1%

Why are so many CEOs convinced that the conservative trend will continue? They point to the recent downfall of leftist governments in Eastern Europe as proof that free-market principles hold the most promise for stimulating growth. "Communism and socialism have both failed miserably," says W. W. Sprague Jr. of Savannah Foods & Industries. "The free-market system is the only survivor."

Others maintain that the economic uncertainties of the U.S. trade and budget deficits call for that conservative hallmark, fiscal restraint. Says Robert P. Hauptfuhrer of Oryx Energy, an oil production and exploration company: "Domestic and international realities will drive us in the conservative direction. To be a player on the world scene it is imperative to have your financial house in order." Jerre L. Stead of Square D is on the same wavelength: "People will be tired of a federal deficit and taxation, and will want the federal government—in fact all government—to become smaller."

Then there are those chief executives who belong to the if-it-ain't-broke-don't-fix-it school. Says Michael D. Rose, head of the Promus Cos., which owns hotels and casinos: "We saw through the Sixties and Seventies that more government is not a solution. Deregulation in the Eighties proved to be a much more effective force for economic growth." William T. Esrey of United Telecommunications is more blunt: "Conservatism will result in greater progress for the long term. It is easy to pour money into projects and heal them for the moment, and frankly that's what liberalism is—redistributing wealth for the short term. For most people it will result in a short-term gain and a long-term loss. The liberal approach is unfair to the greater body of people."

"I'm amazed that my four children are more conservative than I am."

SETH RESNICK

I. MACALLISTER BOOTH
Polaroid

A few CEOs believe that the popular political course will be charted by demographics, not politics. As Americans age, they tend to become more conservative. Some see the baby boom—that big trend-setting bulge in the population—as already pretty right wing. William O. Bourke of Reynolds Metals says they are far to the right of where he was politically at the same age. I. Mac-

Allister Booth of Polaroid adds: "I'm amazed that my four children are more conservative than I am. They are a lot more skeptical of the efficiency of government."

More than 30% of the corporate top guns don't buy these arguments. Many of them expect liberalism to surge in the next few years simply because the invisible philosophic pendulum will be swinging back. Conservative thinking, they say, enjoyed a long and popular run in the Reagan years, and now it's time for a change. "We have seen about a dozen years of conservative leanings," says E. Erwin Maddrey II of Delta Woodside Industries, a Greenville, South Carolina, textile firm. "I think now we'll see a swing the other way, not because it is right but because we don't seem to stay on middle ground."

John H. Croom of Columbia Gas System seems to think the pendulum needs a bit of a push: "Some of the basic problems that we have been trying to deal with—deficit spending, quality of the work force, and staying competitive in a global market—are going to require innovative and courageous decisions. That will require some change in direction."

Q A On matters of social policy, such as welfare, abortion, and child care, how would you characterize your views?

Strongly liberal	1%
Somewhat liberal	27%
Centrist	31%
Somewhat conservative	34%
Strongly conservative	6%
Not sure	1%

Q A On matters of economic policy, such as taxes, government spending, and trade, how would you characterize your views?

Strongly liberal	0%
Somewhat liberal	5%
Centrist	7%
Somewhat conservative	66%
Strongly conservative	21%
Not sure	1%

"Liberalism will advance because of the relationship between liberals and the environmental movement."

JOHN R. HALL
Ashland Oil

Many CEOs who believe in resurgent liberalism see it as a backlash to the government's disappointing record on social issues. As evidence of conservatism's failures, they point to the country's rampant drug problems, its poor education system, its overpriced medical structure, and the growing numbers of homeless people. G. David Hurd of the Principal Financial Group says: "The magnitude of the problems we're facing will be so large, we'll require more government assistance than ever." John R. Hall of Ashland Oil has a particular concern: "Liberalism will advance because of the relationship between liberals and the environmental movement." If he's right, Ashland will have to face continued increases in antipollution regulations and perhaps more lawsuits.

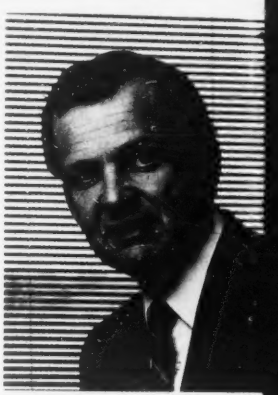
Conservative CEOs do not deny the existence of America's social problems, but they decry liberalism's methods for fixing them. Says Dr. Theodore Cooper of Upjohn: "Conservatives aren't against better environment, better education, or better transportation. They are worried about how to pay for these services." Vista Chemical's John D. Burns puts it another way: "The liberal agenda—which requires more government funds to execute its projects—is suffering from the tremendous budget deficit we have now."

Another group of conservative chief executives believe that so-called liberal issues such as welfare and the environment are better handled their way. "The improvement in the quality of life is dependent on proper administration and fiscal responsibility," says PPG Industries' Vincent A. Sarni. "Conservatism is more in tune with such things."

Some CEOs report that they are not totally in tune with either conservatism or liberalism. Stanley C. Gault of Rubbermaid calls himself a realist when it comes to social issues, particularly child care. Though his company provides services to help employees with children locate reliable child-care centers, he feels that employers should not be responsible for financing the child care. He says: "Paying for the child care of employees is discrimination against single employees and employees who choose not to have children. If you pay for child care, what's the equivalent benefit for them?"

"People will be tired of a federal deficit and taxation and will want government to become smaller."

JERRE L. STEAD
Square D



Louis P. Ferrero, of Anacomp, an Indianapolis microfiche company, represents the 9% of CEOs who believe that the Nineties will not be characterized by a single dominant political philosophy. Says he: "I think the period may end up more toward the middle, with more realism coming out of the left and more sensitivity on the part of the right."

But then what would we do for political debate? F

Q A In the Nineties which political philosophy—liberalism or conservatism—do you expect to advance, and why?

Liberalism will rise	31%
Because political trends are cyclical	14%
Because social and environmental problems have not been solved	11%
Other	6%
Conservatism will rise	57%
Because economic uncertainty requires fiscal responsibility	21%
Because the conservative approach is working	17%
Because Communism and liberalism have failed	16%
Other	3%
Blend of both	9%
Other	1%
Don't know	2%

THE BIG JAPANESE PUSH INTO EUROPE

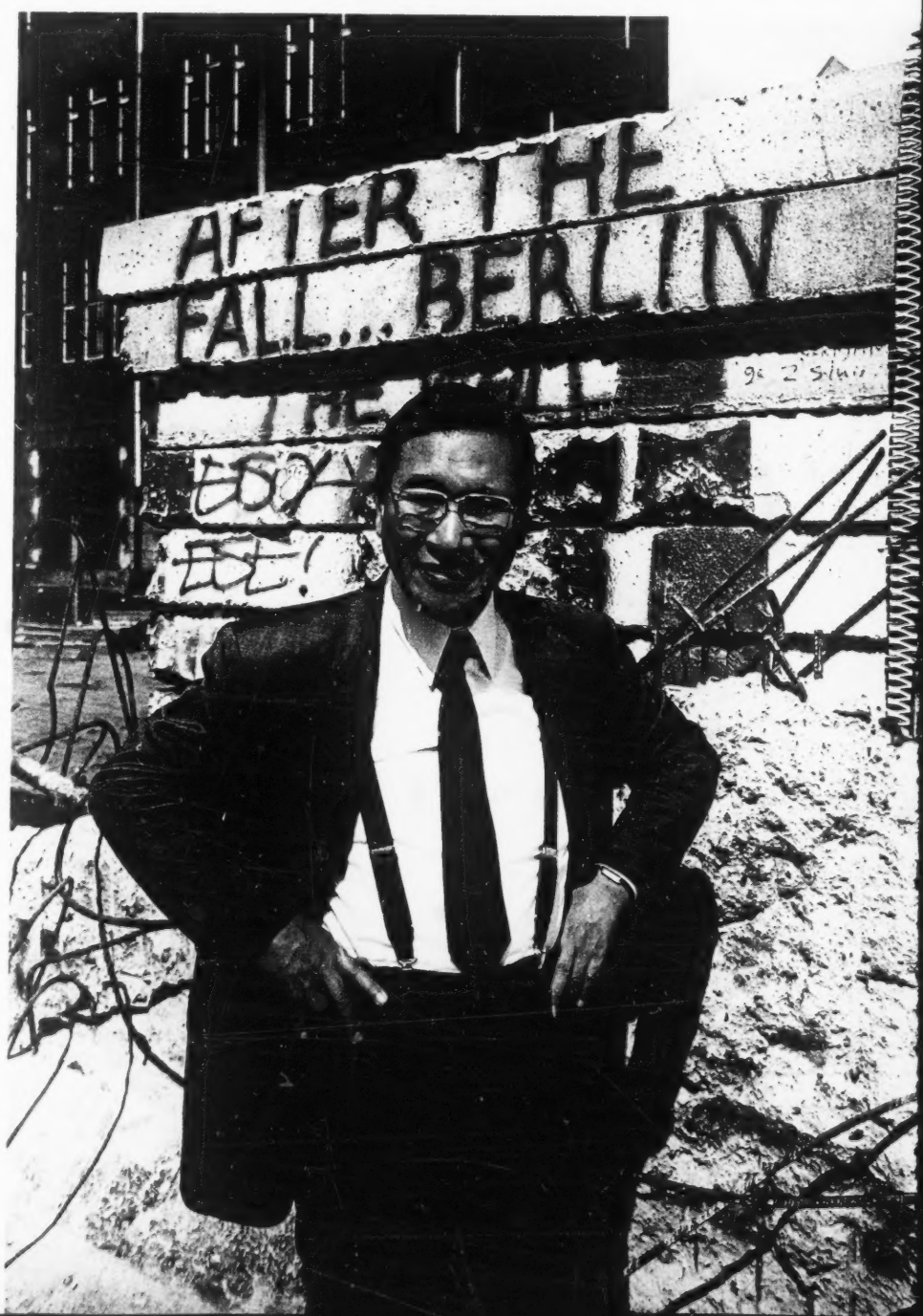
They're acquiring companies, building plants, and turning up the competitive heat. American multinationals will have to run harder to keep up with them. ■ *by Richard I. Kirkland Jr.*

SIGNS OF THE TIMES: "The Japanese miracle can be repeated," declare billboards plastered around Budapest by Minolta, the camera maker. Share prices on the Frankfurt stock exchange have been levitated in part by the $1.4 billion invested by Japanese in the first quarter of this year—up from just $6.8 million a year earlier. In London, now home to some 60 Japanese banks, bond traders unwind with whisky and off-key warbling in one of the new *karaoke* sing-along bars transplanted from Tokyo's Ginza to the East End. Just down the road at Eton College, tailcoated scions of Britain's elite will soon study Japanese, courtesy of a $1.7 million grant from Sumitomo.

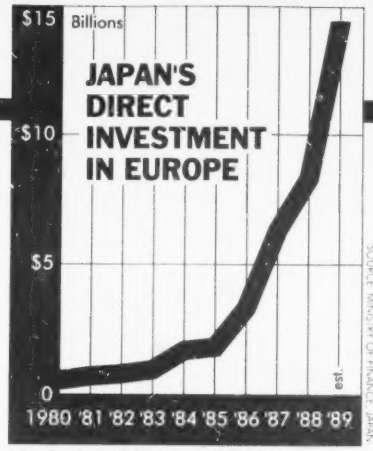
After years of treating Europe as a commercial afterthought, Japan has discovered the Old World—with a vengeance. In the latest fiscal year, which ended March 31, Japanese companies have put an estimated $14.4 billion into direct investments in the European Community. That's a 74% increase from the previous year and a sevenfold rise since the mid-1980s.

Almost half that stake was used to buy European companies. Says David Lough, publisher of *M&A Japan*, a specialist newsletter: "In 1989, for the first time, Japanese companies began to be taken seriously by European investment bankers." And by Japanese financiers as well. In the past 12 months Tokyo's major banks and brokerages either started or expanded mergers and acquisitions operations in Europe.

Japan's Europhoria is unlikely to fade soon. Says Kenichi Ohmae, managing director of McKinsey & Co. in Tokyo: "Japanese investment in Europe is going to grow in quantum leaps. In the past five years Japan has invested heavily in the U.S. That will



At home in Europe: Sony chief Norio Ohga studied music in Berlin in the 1950s. In the 1990s he wants to boost sales on both sides of the wall.



continue. But for the next five years the focus will shift to Europe."

As this investment tsunami rolls across the Continent, it will become one of the major forces reshaping Europe's economic landscape in the 1990s. Since the Japanese are determined to increase the technological sophistication as well as the size of their operations in Europe, competition is bound to intensify. That threatens not only national champions in France, Italy, and Britain, but also the outsiders with the biggest stake in Europe—U.S. multinationals. And since many European companies will emerge from the fray stronger—and perhaps in partnership with the Japanese—American companies can expect tougher battles for market share in the U.S. and the Third World.

PROTECTIONISM has played a part in drawing Japanese manufacturers into Europe. Whenever the EC has gotten porcupinish about imports, its quills have usually been aimed at Japan. But raw, back-up-the-trucks opportunity is a far more important motive. Says Jack Schmuckli, the Swiss chairman of Sony's European operations: "We think no other area in the world offers so much potential."

Western Europe's economy is already larger than America's, and many forecasters think it will grow faster in the decade ahead. Last year, for the first time, Sony sold slightly more electronic gadgetry in Europe than it did in the U.S. Most of Sony's Japanese competitors, though, have a long way to go before their market share in Europe comes anywhere close to what it is in the U.S. or Asia. Still, as Europe dismantles its internal trade barriers as part of Project 1992, the Japanese should have an easier time catching up.

The unexpected opening of Eastern Europe is a big bonus. It offers both a potential low-cost manufacturing base and a huge market for Japan's consumer goods. Says Norio Ohga, Sony's chief executive: "The biggest problem in Eastern Europe isn't the poor state of the physical infrastructure but the need to develop an intellectual infrastructure—bankruptcy and patent laws, clear property rights, and the basic understanding of international accounting principles." With those issues unresolved, Ohga is in no rush to put a plant east of the Elbe.

Until recently Japan's investment in Europe was concentrated in Britain, whose language and business customs are comfortingly similar to the American market the Japanese know best. Now the Japanese are starting to spread their money around. Says Robert Hormats, vice chairman of Goldman Sachs International: "What impresses me is not just the rise in the magnitude of this investment but its growing diversity." Among the recent items in Japan's shopping bag: distilleries in Scotland, a French cognac maker, a Parisian shopping mall, a German hair care company, and a fax machine factory near Naples.

Many of the Japanese companies now investing in Europe are newcomers to global business. Japan's reputation as an export powerhouse comes from a handful of highly visible industries, like cars and electronics. The Japanese pharmaceutical industry, for example, is stunningly provincial. Sankyo, the second-biggest drugmaker, derives less than 4% of its $2 billion annual revenues from foreign sales, vs. up to 50% for its American and European competitors. To start catching up, Sankyo in January paid $130 million for 74% of Luitpold-Werk, a small, privately held West German drug company with a good distribution network in the U.S. as well as in Europe.

Last December, Japan's Leyton House bought 54% of Hugo Boss, the leading West German designer of men's clothing, for about $300 million. Four months later Renown, the biggest Japanese clothing maker, announced plans to acquire Britain's upscale Aquascutum for $125 million. Renown, which had virtually no European sales, will use Aquascutum to move into the prestige market back home as well as to expand in the U.S. and Europe. Also in April, Japan's Seibu Saison and France's Hermès—in which Nippon Life recently purchased a 1.5% stake—formed a joint venture to acquire Jean-Louis Scherrer, one of the last remaining independent couture houses in Paris.

She's on her way to the Japanese school in Düsseldorf.

These ventures are aimed in part at the affluent Japanese, who are traveling to Europe in ever greater numbers. In pricey shops on Paris's Right Bank, signs announcing JAPANESE SPOKEN HERE now hang alongside those offering assistance in English. At London's leading tailors, a customer often has to push through a crowd of eager Japanese.

When Japanese carmakers increased their direct investment in the U.S., more than 350 parts suppliers followed. That trend is beginning in Britain, where Japan's Big Three have pledged to spend nearly $3 billion on new assembly plants by the late 1990s. To supply Toyota's factory aborning in the rural Midlands, Nippondenso recently paid $40 million to acquire IMI Radiators in Yorkshire. Says Raymond Douse, head of European M&A for Daiwa Securities: "For many suppliers a green-field investment takes too long. So acquisitions are an attractive alternative."

The biggest shift in Japanese investment patterns will be toward Germany and, to a lesser extent, France. Despite its dominance in the European economy, West Germany has so far attracted only about a fifth as

East and West meet in this West German abode.

PHOTOGRAPH BY DILIP MEHTA—CONTACT

BARRY LEWIS-NETWORK

HERO AGA CONTACT

Two kinds of shopping: Visitors to London try tweedy raincoats at Aquascutum (left), now Japanese-owned. At right, a young Düsseldorf resident checks out.

much Japanese investment as Britain. The reasons range from language difficulties and high wage costs to Germany's traditional Japanese-like prickliness toward acquisitions—whether by foreigners or locals.

That's changing fast, along with the economic and political geography of Europe. Scan the guest list in any hotel or government ministry in Prague or East Berlin and you see proof of Japan's intense interest in Eastern Europe's potential. Still, with a few exceptions, the cautious Japanese aren't crowding to put their own money into these troubled economies. Of more than 3,000 joint ventures signed by Western companies through March, Japan accounted for fewer than 40.

Instead the Japanese are seeking West German partners who know the area (see Europe). Last fall Kao, one of Japan's leading toiletries companies, acquired West Germany's Goldwell for $153 million. Now Goldwell has struck a deal with an East German distributor to market Kao's products there. To help scout other potential acquisitions for its Japanese clients, Nomura recently took a 5% stake in Matuschka Group, West Germany's biggest independent investment bank.

West Germany's other main attraction is the technological sophistication of its industries and work force. Matsushita now makes VCRs in partnership with Bosch and electronic components in a joint venture with Siemens. And in a move drawing anxious stares from General Electric, Boeing, and others, Mitsubishi and Daimler-Benz, the Godzilla and King Kong of their respective industries, recently began talks on possible collaboration on products from cars to airplanes.

Wherever it flows in Europe, Japan's capital attracts attention. But it doesn't always trigger the negative reaction so prevalent now in the U.S. In Britain particularly, Japan's image is overwhelmingly positive. Because Japanese electronics companies have built plants there, Britain is now an exporter of videotape recorders even though it has no VCR industry of its own. Having resuscitated Britain's dying auto industry, Japanese carmakers plan to export from there too—a development that disturbs General Motors and Ford no less than Peugeot and Fiat. John Lawson of Nomura Research Institute in London predicts that Britain's current $11 billion trade deficit in cars will be halved by the mid-1990s.

So never mind that American-owned companies employ more than 530,000 Britons to Japan Inc.'s 30,000, or that there are more French and German companies than Japanese in the part of southeast Wales now known as Nippon Valley. When polltakers for Market Opinion Research International last summer asked the citizens of Luton, home of a big GM plant, if they'd be better off with a different owner, 60% knew what they'd prefer—a Japanese company.

On the Continent, however, particularly in France and Italy, an undercurrent of anxiety lingers. Last year Asahi Breweries bought the three-star Lucas-Carton restaurant in Paris. Recalls co-owner Eventhia Senderens: "The French press acted as if people would now eat with chopsticks at Lucas-Carton. In fact, nothing changed except that we took our capital out of the restaurant to expand in

HERO AGA CONTACT

A manager keeps current in his new hometown.

HERO AGA CONTACT

The kids are Japanese, the language drills are in German.

REPORTER ASSOCIATES *Susan Moffat, Sara Hammes*

other areas of the food business." When Japanese Prime Minister Toshiki Kaifu paid a state visit to France last January, European Affairs Minister Edith Cresson described Japan as "an enemy" with "an absolute desire to conquer the world."

More common, though, was Italy's response to Toyota's announcement in 1989 that it would invest more than $1.2 billion in car assembly and engine plants in Britain—Japan's biggest green-field investment in Europe. The Italians, who have so far attracted less Japanese investment than has Bermuda, sent a high-level mission to Tokyo to describe their country's charms and do a little polite arm-twisting. At the same time, the Italian government began negotiations to reduce the 41 quotas the country has long imposed on Japanese goods. France, too—despite Madame Cresson's complaints—has lately put on a happier face. Admits Industry Minister Roger Faroux: "It is better to have Japanese factories than unemployment."

BARRY LEWIS—NETWORK

A bit of Japanese culture—loosely defined—has come to London. This *karaoke* bar is in the East End.

WHAT DESERVES closer scrutiny are the market-distorting national and regional subsidies—not unlike the tax breaks handed out by state governments in the U.S.—that are often used to lure job-creating Japanese investors to Europe. By some estimates Britain in the early 1980s spent as much as $85,000 in subsidies for every new job. Complains Philippe Geyres, head of strategic planning for SGS-Thomson, the European semiconductor giant: "This kind of thing gives our Japanese competitors an unfair advantage and requires much clearer regulation by the EC."

Rather than limit Japanese investment, the EC will likely try to redirect it—in effect, to drive it up the value-added chain from so-called screwdriver plants to the most technologically sophisticated manufacturing possible. Says John Stopford, a professor at the London Business School: "The emphasis will shift from prosecuting antidumping cases to using local-content requirements and rules of origin to get the Japanese to shift their R&D here." Typical of the new approach is a 1989 EC ruling that semiconductors must be fabricated in Europe to avoid punitive tariffs.

The predictable result has been increased European investment by Japanese semiconductor makers. Among the biggest spenders are Fujitsu, which is building a $650 million chip plant in Britain's Midlands, and Mitsubishi Electric, which is about to break ground on a similar $300 million factory near the West German town of Aachen.

Some Japanese managers grumble that EC local-content rules will discourage further investment by making it difficult to maintain production quality. Most, though, seem resigned to living with such rules. A few, notably Sony's Norio Ohga, practically embrace them. Says Ohga: "For us, the pressure from the EC merely accelerates an evolutionary process that was already under way."

Ohga, who is fluent in English and passable in German, is especially comfortable in Europe. He studied music in Berlin in the 1950s and later toured Europe as an opera singer. The late conductor Herbert von Karajan was among his close friends.

Five years ago less than 20% of Sony's European sales reflected local production. Since then, spurred in part by the sharply stronger yen, Sony has accelerated its drive to shift manufacturing closer to its markets. The company doubled capacity at its TV factory in Wales and added plants for other products in France, West Germany, and northern Italy. Today these eight factories supply 50% of Sony's European sales. In May, Sony announced construction of a new TV factory in Barcelona capable of making 600,000 TV sets a year by 1993.

As the next stage in its drive to be what Ohga calls "a good European corporate citizen"—a phrase that falls frequently from the lips of Japanese managers—Sony is moving to expand its European-based R&D. It recently opened a second R&D

BUYING IN: SOME RECENT JAPANESE DEALS

COMPANY	TARGET	VALUE in millions
Fuji Photo Film	Crosfield Electronics Britain	$369
Dai-Ichi Mutual Life Insurance	5% of Cie Financière du Groupe Victoire France	$350
Leyton House	54% of Hugo Boss West Germany	$300*
Nippon Life Insurance	4% of Banco Bilbao Vizcaya Spain	$250
Mitsubishi	Buitoni (U.K.) Britain	$250*
Nippon Seiko	United Precision Industries Britain	$232
Idemitsu Kosan	9.6% of Statoil Norway	$214
Honda	20% of Rover Group Britain	$157
Kao	75% of Goldwell West Germany	$153
Fujisankei	25% of Virgin Music Group Britain	$150

* Estimate.

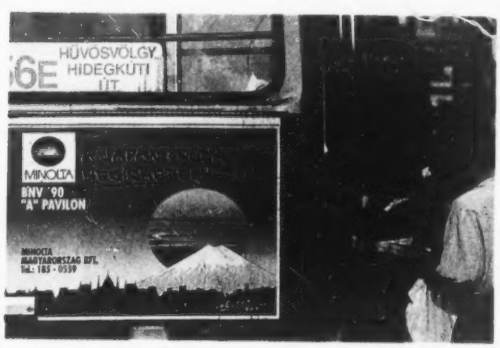
SOURCE: KAS JAPAN

Sony research engineers collaborate in Britain.

center near Stuttgart and moved responsibility for research into digital VCRs from its Tokyo headquarters to its five-year-old European technical center west of London.

Most Japanese companies in Europe these days are making similar moves—or at least similar noises. Yamanouchi, Japan's biggest drugmaker, has built an R&D center at Oxford, as has Sharp, the electronics maker. Hitachi is doing electronics research at Cambridge and developing software at Trinity College in Dublin.

Despite their efforts in spreading around the R&D pixie dust, most Japanese companies know they still have a long way to go before they match the status of such U.S. companies as General Motors or IBM. In



A Budapest bus touts a new Japanese miracle.

the ultimate sign of insider status, Big Blue even participates as a European company in EC-backed high-technology projects. But as Takao Negishi, head of the Electronic Industries Association of Japan in Europe, likes to point out, "IBM has had 70 years to achieve that. We've only had ten."

One big hurdle for Japanese companies is their tendency to have an almost exclusively imported management team in Europe. Says Sony's Ohga: "We have to stop sending so many Japanese managers." Europeans head all but one of Sony's national subsidiaries and run its European headquarters in Cologne. But Sony, which also boasts two non-Japanese on its board of directors, is ever the maverick. Archrival Matsushita, which employs roughly the same number of people in Europe (10,000) and enjoys slightly higher sales ($4.5 billion), has almost no non-Japanese executives among its top management and financial staff.

Less visible but no less important is the development by Japanese companies of more integrated European management structures with at least some independent say over product planning, marketing, and capital spending. Says Gary Hamel, a professor at the London Business School and consultant to many multinationals: "In the years ahead few companies will succeed in Europe without having a very powerful regional organization." Again, only a handful of Japanese companies have taken even their first faltering steps toward this goal.

If Japanese companies cope successfully with the awkward transition from pure exporters to true multinationals—and they probably will—that should do wonders for reducing Europe's $21 billion trade deficit with Japan. By boosting employment and adding to its technological base, continued Japanese investment should also improve Europe's overall competitiveness. What it won't do is eliminate trade frictions or the pressure for protection from threatened local industries.

For some time now the European carmakers most sheltered from Japanese exports—France's Peugeot and Italy's Fiat—have been loudly demanding that any lowering of national quotas be accompanied by "voluntary" limits on Japan's EC market share. Moreover, they want those restraints to apply both to imports and to cars the Japanese make in their European plants, unlike similar limits in the U.S.

Japanese carmakers publicly denounce that proposal as unfair. At the same time they privately promise to be "prudent" about using their European production to rapidly increase market share beyond its current 10% level. As old hands at fortress building themselves, the Japanese are worried less about being forced to substitute local production for exports than about being denied reasonable access to a huge, vibrant marketplace.

EUROPE'S real challenge is to maintain that dynamism by delivering on its promise to construct the most open market possible. If direct investment is a vote by global capitalists on an economy's attractiveness, then Japan's investors have only recently begun to appreciate the Old World. Now thoughtful analysts, such as Yoshitaka Kitao, head of European M&A for Nomura/Wasserstein Perella in London, no longer dismiss the notion that Europe might someday surpass the U.S. as a magnet for Japanese capital. "But that depends very much," he says, "on the success of the 1992 project and on economic revival in the East." In the years ahead, Europe should be concerned when it starts attracting too little Japanese capital, not too much. F

In Cannes your host at the famous old Carlton is now Japanese.

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ABOVE: Peter Sibbald photographed Barry Gibbons, CEO of Burger King, with a Whopper in Miami.

COVER: Sibbald's camera caught Leo McKernan on a forklift at a Clark Equipment plant in Kentucky.

"In the 1980s, LBOs, takeovers, and global competition left a path of destruction out there. Now somebody is going to have to fix it." PAGE 36

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"I don't want to invest in a business everyone is trying to outlaw."

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"Just when you are doing well is usually the time you fall asleep and go to the termites."

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"We had no hope at all before the students turned up."

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"If it had been a truthful thing, it would have been a really fine thing. But it wasn't, and, hell, that's all."

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"We have the right to fail, but let's fail only once in a row."

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"The guys logging really long hours aren't seen as heroes anymore. They're seen as turkeys."

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Forecasters, from lower left: Brownstein, Burck, Schiff, Labate, Kuhn, Spiers, Carson, and May

THE BULLETINS are bleak. Housing starts are the lowest since the 1982 recession. Retail sales have fallen for three months straight. What better time for FORTUNE chief economist Todd May and his team to proclaim the historic news: The great economic expansion that began in November 1982 will continue right through October 1991, when it will break the all-time record set in the Sixties. "And," says May, "we see nothing to indicate that it will end then."

FORTUNE's team has been consistently on target during the growth years, even as others periodically fretted that a bust was imminent. A year ago two-thirds of the Blue Chip panel of 51 economists predicted a recession in 1989 or 1990. May and his crew never wavered from their view that the economy would keep ticking along, albeit slowly.

They began preparing for this 18-month forecast—they do one twice a year—with an intensive search for excesses, like inventory accumulation, that could trigger trouble. Senior economist Vivian Brownstein concentrated on foreign trade, government spending, and inflation. Economist Joseph Spiers, who joined us in April after ten years at McGraw-Hill, analyzed data on housing as well as consumer and private business spending. Statistics were gathered by associate editors Lenore Schiff and Lorraine Carson while reporters John Labate and Susan Kuhn assessed what the outlook would mean to 21 major industries.

Before May keyed the data into FORTUNE's computerized model, his whole staff interviewed dozens of government and business experts. Says Charles Burck, who has edited Fortune Forecast for seven years: "This is not just an exercise in number crunching. Our forecasts reflect real-world reporting and the judgment of first-rate thinkers." To tap into the wisdom, turn to page 52.

EXECUTIVE EDITOR

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TOUGH TIMES FOR JAPAN'S BANKS

Once they seemed on the verge of taking over the world. Now the juggernaut is slowing down. Competitors can breathe easier, but borrowers should expect to pay more. ■ *by Carla Rapoport*

IF ANY single group of Japanese seemed invincible in the past few years, it was the bankers. The blue-suited legions from Tokyo roamed the world, busting into just about any financial market they wanted to. Though they sometimes seemed to have more cash than caution, they could always find more yen back home to paper over mistakes of inexperience.

Now their world is changing. They still have plenty of power: Eight of the ten biggest banks in the world are Japanese. (The other two are French.) Japan's 12 commercial banks, known as city banks, control assets worth $3.2 trillion, roughly equivalent to the total assets of the entire U.S. commercial banking industry. Japan's largest bank, Dai-Ichi Kangyo Bank (DKB), alone holds assets of about $435 billion. That outstrips the total assets of Citicorp, Chase Manhattan, and BankAmerica combined.

CAROLINE PARSONS

A shakeout in Japanese banking will leave some empty chairs, says Dai-Ichi Kangyo's Kuniji Miyazaki.

But a sharp climb in Japanese interest rates, an unexpected 27% drop in the value of the yen since the fall of 1988, and the collapse of the Tokyo Stock Exchange's three-year super-bull market have jolted the juggernaut. Says Sotoo Tatsumi, president of Sumitomo Bank: "Japanese banks can't keep growing at such an enormous rate anymore. We *will* slow down."

Financial deregulation at home, much of it at the insistence of Washington, has created a newly competitive market for the banks. Top managers, with their attention more firmly fixed on the business in Japan, will have less time to dabble in London and New York. That's good news for competitors around the world, though not for customers. With a squeeze on, Japanese bankers will be out to increase their profits, and borrowers will have to pay more. They've also become choosier about new loans. After lending big to Donald Trump and RJR Nabisco, they grew reluctant to help refloat Trump or to join RJR's huge refinancing.

The Japanese had a remarkable run while it lasted. They began flocking overseas in the mid-1980s, flush with the proceeds of Japan's trading surpluses. By the end of 1988 their overseas loan portfolio had tripled to more than $1.7 trillion, nearly 40% of all international lending. In the U.S., Japanese banks account for more than 12% of total lending and 25% of the California market.

But now, boosting profits has become more important than growth. Says Yoh Kurosawa, newly appointed president of the Industrial Bank of Japan (IBJ) and one of the industry's most articulate spokesmen: "Rank us by assets and we're eight of the

top ten in the world. But if you look at profits, none of us are even in the top ten. We are way down the list. From now on, lending growth must equal profit growth."

What's happened to big is beautiful? The bankers' change of heart certainly does not stem from any kind of liquidity crunch. The Japanese continue to save prodigiously, parking much of their money in banks. The economy remains strong, and those trade surpluses still inspire awe.

Like most Japanese companies expanding overseas, banks had been pushing for market share at the expense of profits. That strategy worked well for makers of semiconductors or the latest electronic gadgets, which could make up for losses abroad with robust profits at home. And it worked for a few years for Japanese banks, which attracted new customers by lending money at low interest. Competitors grumbled that the banks were making so-called hara-kiri loans, but borrowers understandably loved them.

Then, three years ago, the Bank for International Settlements (BIS) in Basel, Switzerland, decided that Japanese banks weren't playing fair because their reserves were so much smaller than those required by most Western central banks. Though it has no enforcement powers, the BIS set standards for all international banks and asked the Japanese to go along. Eager to be part of the global banking club, the Japanese blithely swallowed the new rules. Because of the long-running bull market and their own heady price/earnings ratios, the banks easily raised trillions of yen of new equity and kept on trucking.

But other problems were bubbling up in the background. Responding to heavy pressure from the U.S., Japan began liberalizing its financial markets in earnest in the mid-1980s. By early this year Japanese banks were paying competitive market rates for 55% of their funds, compared with 10% five years ago, when regulation still capped nearly all the rates paid to savers. A total end to fixed interest rates on deposits is expected within two to three years.

At the same time, Japan's capital markets have been deregulated as well, giving Japanese companies some alternatives to borrowing from banks. Powerful banks like IBJ, which had helped create Tokyo's industrial powerhouses in the first place, suddenly found those same customers raising billions through convertible bonds or commercial paper.

The banks could have shrugged off these pressures if not for the combined hit of higher interest rates, the falling yen, and the stock market collapse. The interest rate hike quickly cranked up the newly deregulated cost of funds, which caused bond prices to drop sharply, which in turn inflicted huge losses on the bank's bond portfolios.

The drop in the yen pushed up the value of all those overseas loans, requiring a deeper pool of reserves to satisfy the BIS standards. And even though the Tokyo stock market regained more than a third of its losses by mid-June, bankers agree that the days of raising buckets of cheap equity to fuel growth are over. By the end of March four banks had slipped below the BIS capital adequacy ratio that the Japanese agreed to meet by the end of 1992. The only way out for them is to reduce lending growth, boost profits (which flow into reserves), or both.

In a top-floor office of the Sanwa Bank skyscraper in central Tokyo, Teruyoshi Yasufuku, deputy president, slaps his chair in an unbankerly manner as he drives home

"We *will* slow down," says President Sotoo Tatsumi about Sumitomo Bank's international business.

WHERE PROFITS ARE GETTING SQUEEZED

Fiscal years ended March 31; in millions of dollars

BANKS	TOTAL ASSETS 1990	% change from 1989	NET INCOME 1990	% change from 1989
DAI-ICHI KANGYO	$435,718.4	5.4%	$1,014.9	-34.6%
SUMITOMO	$407,105.5	—	$1,290.0	-20.3%
FUJI	$403,725.3	1.5%	$1,030.0	-27.5%
SANWA	$387,452.2	3.8%	$1,136.7	-10.1%
MITSUBISHI	$354,362.0	-7.0%	$998.3	-26.2%
INDUSTRIAL BANK OF JAPAN	$285,158.8	-2.4%	$594.6	-8.8%
TOKAI	$243,826.7	2.1%	$378.2	-24.1%
BANK OF TOKYO	$228,443.0	2.7%	$550.2	16.3%

PHOTOGRAPHS BY TAKESHI YUZAWA

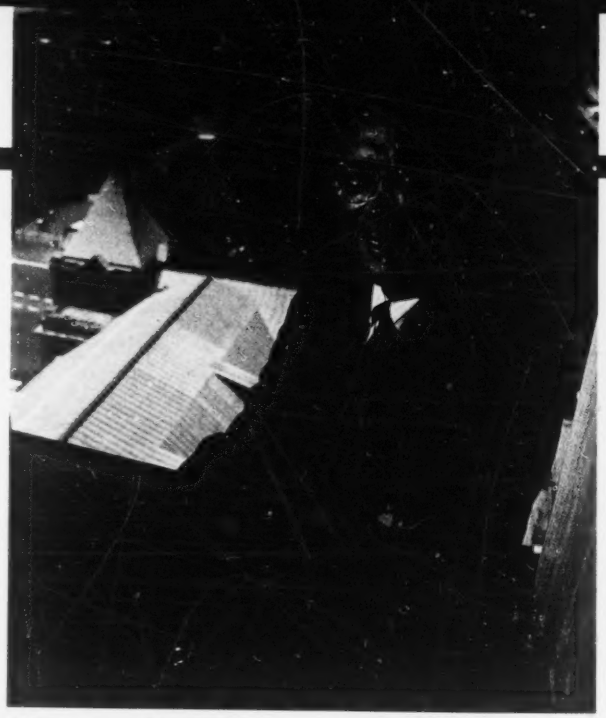
his point: "Up to now we could take these BIS standards lightly. Now they are like a silk stocking strangling us. Unless we are really profitable, we can't grow. So this ridiculous competition has to stop."

Some Japan watchers, who have heard similar vows of self-restraint before, are skeptical. Could the bankers simply have lost interest in the U.S. because of the savings and loan debacle, soft real estate markets, and the collapse of the LBO business? Is such talk a way of wheedling Congress out of passing legislation that would control expansion by Japanese banks in the U.S.? And what about inertia? Says Sanwa Bank's Yasufuku: "There is always a lingering mentality of those fighting at the front. You can't change a soldier overnight."

The word does seem to be getting to the trenches. Masahiro Nagayasu, a vice president at Fuji Bank in New York City, says that his branch will hold lending at its current level for the next two to three years at least, on orders from Tokyo. DKB is currently asking branches to restrain growth in lending to just 2% to 3% a year, less than half of last year's rate. IBJ's Kurosawa says he will cut the increase of the bank's overseas loans in half, to about 8%.

Overall, Japanese bankers think that their 20% to 30% annual growth rate of the past five years will drop to around 10% and stay at that level for a while. Says Koji Takahashi, deputy president of DKB: "We have a quarter of California's loans. That's enough."

Two developments back home, the dramatic rise in consumer borrowing—it's now the fastest-growing part of the business—and the gradual but certain drift toward abolition of Article 65, Japan's version of Glass-Steagall, which keeps banks and securities firms out of each other's business, mean that running in a pack chasing growth for its own sake no longer makes much sense. Japan's huge banks will be forced to choose differing strategies, based on their individual strengths. Some, such as Kyowa, will become primarily domestic banks, sticking to retail banking. Others, such as the influential long-term-credit banks, which lend mostly to companies, not individuals, will move into investment banking, capitalizing on their superior contacts with Japan's major industrial groups.



At IBJ, new president Yoh Kurosawa now seeks higher profits.

The strongest banks, including Sumitomo, Sanwa, Fuji, and Mitsubishi, will grow both overseas and at home, in the style of Citicorp. Still others will almost certainly disappear, merging with surviving banks. Says Kuniji Miyazaki, president of DKB: "Some banks won't be able to keep pace with the changes. This means more mergers and collaborations to ensure survival. In the next ten years you'll see fewer Japanese banks."

THE GRADUAL breakdown of Article 65 does not surprise many Japanese, but the rise in consumer borrowing does. An article in an influential Japanese business magazine about Fuji Bank's new, so-called *jukatsu* loans (the word translates to "brighten your lifestyle") was headlined FUJI BANK SPREADS APHRODISIACS. Indeed, consumer borrowing has long been considered a contradiction in terms in savings-mad Japan, about as odd as ordering a sushi sandwich. That's changing, partly because young people are less interested in suppressing acquisitive urges than their parents were and partly because banks are pushing credit so hard.

Sumitomo's Tatsumi, flashing diamond and gold cuff links in the shape of the bank's logo, couldn't be more pleased with the trend. Says he: "Japanese lifestyles and values are becoming more Westernized. People

REPORTER ASSOCIATE *Sara Hammes*

Return on assets is a new preoccupation for Japanese banks, says Bank of Tokyo's Yamaguchi.

are becoming more interested in enjoying their lives. This is not a bad thing for Japan." Takahiro Kagawa, deputy manager of Sanwa's personal banking division, is blunter: "We wish to help people to enjoy a higher social status. We want to encourage borrowing. It's more profitable than other lending."

CONSUMER LOANS are growing at a breathtaking pace. According to government figures, such lending by Japan's major commercial banks quadrupled in the 24 months ended March 1990 to a record $42 billion. DKB says consumer loans totaled 20% of total lending as of last March, up from 10% in 1987. Sanwa plans to reach that level by 1992. Sadami Takahashi, deputy president of Mitsubishi Bank, makes no apologies: "Japanese feel less guilty about borrowing than we did before." The bank is planning to allocate 50% of its new domestic loans in the next six months to consumer lending.

In the process, banks are finally shedding their stodgy, arrogant image. In the past 12 months they've been introducing innovative new services and loan packages. They've begun chasing loan prospects by direct mailings, telephone, and door-to-door solicitations. In the old days of total regulation, Japan's bureaucrats made sure that the bigger banks didn't offer better services than the smaller ones. Cash machines, for instance, were open only during banking hours.

Today service is so advanced that a holder of Sanwa's bank card can borrow two million yen ($13,032) more easily than making a savings account withdrawal. If you pay your bills through Sumitomo's direct-debit system, you get a reduction on credit card interest. Sumitomo has tripled the number of cardholders since it introduced the system in 1988. For its "brighten your lifestyle" loans, Fuji Bank gets homeowners' names from government records and offers to lend up to the total value of the home.

The upsurge in consumer lending in Japan is attracting young bankers who formerly would have sought an overseas assignment. A young official recently cajoled his personnel department into letting him pass up a scheduled New York tour, even though the bank had paid for his Ivy League degree in preparation for the assignment. Says he: "I'm not interested in working in New York. Three years ago I was. Now the talent is coming back to Tokyo. This is where the money is."

This newly competitive environment at home may be good for Japan's foreign competitors, but not for borrowers abroad. Mark Lerner, a managing director at Chase Manhattan in New York, points out that Japanese banks are clearly interested in charging more for loans. Says he: "They are raising the minimum sizes of deals they will work on. They are looking for more up-front fees." Adds a corporate treasurer for a major U.S. utility: "The Japanese used to be one-eighth of a point cheaper than other banks. That's not the case today."

In Tokyo, bankers waste little time turning the conversation to ROA and ALM: a bank's return on assets and its asset-liability management, which includes estimating what percentage of its loans may default. Both are relatively new considerations for the Japanese. Says Tamotsu Yamaguchi, deputy president of the Bank of Tokyo: "In the U.S. you have a column for ROA. Here we've never seen such a ranking." Seiichi Tsurumi, formerly of Tokyo's Federation of Bankers' Associations, agrees: "In a regulated environment, the best way to grow was to attract deposits. Profits were guaranteed. Today, forget it."

DKB executives in Tokyo say the spreads between their cost of capital and the interest they charge on overseas loans have to rise from the current 0.25% to 0.30% or 0.35%, an improvement that other bankers agree is necessary for their own operations. The average return on assets for Japanese banks is currently around 0.35%, compared with around 1% for U.S. and British banks. Japan's city banks privately forecast that within a year or two the average figure in that country will jump to 0.5%. The internal projections of the long-term-credit banks call for an increase to between 0.45% and 0.60% over the next few years.

Tokyo bankers concur that, for example, should the Chunnel project between Britain and France need to borrow more, its backers should plan on paying higher interest. Some project managers may find that Tokyo won't return their calls at all. In their lending to developing countries, the Japanese are waiting for government incentives in the form of tax breaks or other inducements before sending any more cash that way.

The Japanese are also expected to pull back from the huge capital markets in Europe. They arrived in force in the early 1980s, partly to escape rigid regulation back home. Now, however, their share of interbank lending in the Euromarkets, a low-margin business, is expected to decrease. The number of Japanese banks leading syndicated loans in the Euromarkets has already dropped to just four out of the top 20 in the first six months of the year. Last year they led seven of the top 20 syndicates.

For all the new emphasis on profitability, some things aren't changing. Japanese bankers cling to their self-image as pillars of Japanese society. Despite IBJ's recent launch of a private banking department aimed exclusively at Japan's new rich, Kurosawa insists that the business of making money can go only so far in Japan. Says he, with a straight face: "Toyota can make big profits, but not the banks. We have some public character. People don't like to see bankers earning big salaries in Japan."

Sanwa's Yasufuku: "You can't change a soldier overnight."

Still, the bankers insist that they want to run their businesses better. Mitsubishi's Takahashi says it best: "In my view we were rushing overseas in competition with each other. We weren't just competing on the volume of loans, but on the number of overseas employees, branches, even the number of computers. We would always think of the other Japanese bank first when making plans. Now we simply cannot afford to do that." That attitude has got to be good for the rest of the world. F

OVERSEAS SALES TAKE OFF AT LAST

Led by Boeing and the computer industry, U.S. manufacturers are starting to make big dents in global markets. They're chipping away at the trade deficit too.

■ *by Jacob Park*

OVERSEAS SHIPMENTS of America's top 50 exporters sailed past $100 billion last year for the first time since FORTUNE started keeping track a decade ago. Although the U.S. trade deficit still hovers around $115 billion, it declined in 1989 for the second year after seven straight increases and is still getting smaller. It was down about 10% in the first quarter. In February it dropped 35% from January to the lowest monthly total since 1983. Says Tony Villamil, chief economist at the U.S. Department of Commerce: "American companies are getting more serious about the global market."

Boeing, No. 1 for three years in the early 1980s, regained first place, pushing General Motors to No. 2. GM had been the top exporter for seven straight years. Increased deliveries of 747s and 767s to foreign customers gave Boeing a 40% lift in exports, despite a two-month machinists strike during the year. With worldwide airline traffic expected to double by 2005, Boeing may be No. 1 for a long time. In the past couple of weeks alone, $10 billion of planes have been ordered by Japan Air Lines, China's Civil Aviation Administration, and Korea Air Lines.

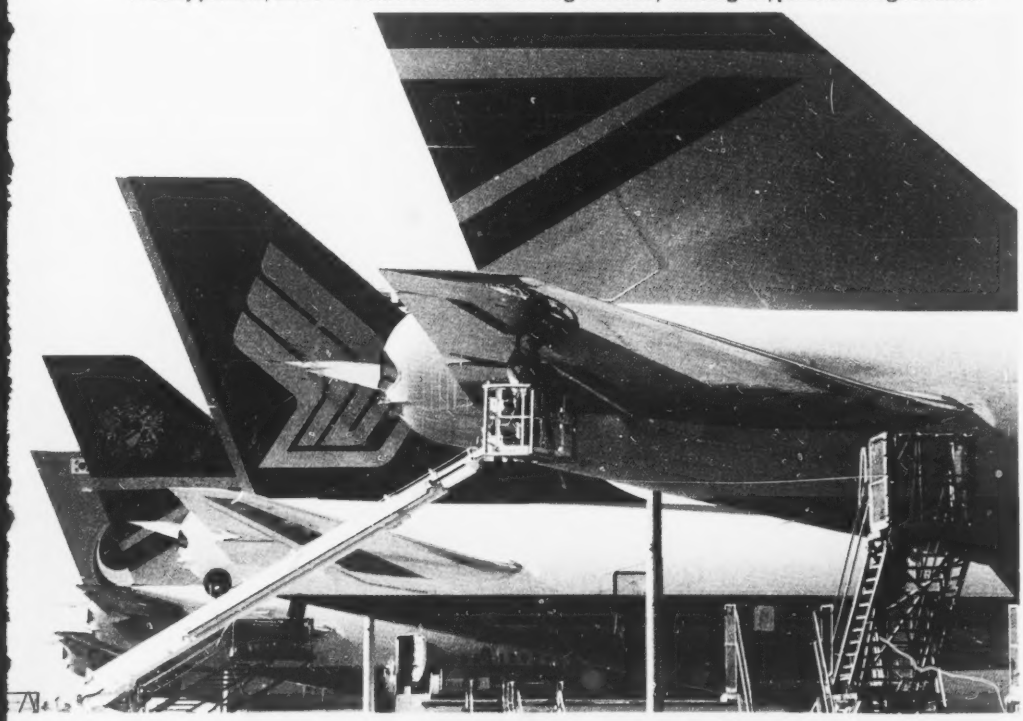
Personal computer makers sold more machines abroad than at home in 1989, a first for the industry. Compaq Computer led all competitors with a 47% increase. The Houston company opened subsidiaries in Norway and Denmark and expanded its European dealer network. (In calculating total exports, FORTUNE counts both direct sales to foreign customers and intracompany transfers to non-U.S. operations.)

Sun Microsystems, one of five new companies on the list, nearly doubled export sales to $751 million because of increased demand for its workstations in Europe and Asia. With the acquisition of Apollo Computer last May, Hewlett-Packard increased its overseas business by 28%. Even IBM, which starts with an enormous export base, grew 11%.

After a two-year absence, Cooper Industries returns to the list, mainly because of its acquisition of Champion Spark Plugs and Cameron Iron Works. Strong worldwide demand for Xerox's new 5090 copiers put the company back on the list after a year away.

How important is the growing overseas market to the U.S. economy? U.S. exports rose 13% last year, to $360 billion, the second-highest increase since our list began. Exports to Japan reached $44 billion, almost double the amount four years ago. According to the Department of Commerce, the export expansion has been the leading source of GNP growth in recent years. F

Freshly painted, these 747s are bound from Boeing's Everett, Washington, plant to foreign airlines.



PHOTOGRAPH BY HARALD SUND

RANK 1989	RANK 1988		PRODUCTS	EXPORT SALES $ Millions	EXPORT SALES Percent change 1988–89	TOTAL SALES $ Millions	TOTAL SALES FORTUNE 500 Rank	EXPORTS AS PERCENT OF SALES Percent	EXPORTS AS PERCENT OF SALES Rank
1	3	**BOEING** Seattle	Commercial and military aircraft	11,021.0	40.4	20,276.0	15	54.4	1
2	1	**GENERAL MOTORS** Detroit	Motor vehicles and parts	10,185.1	8.4	126,974.3	1	8.0	41
3	2	**FORD MOTOR** Dearborn, Mich.	Motor vehicles and parts	8,602.0	(2.5)	96,932.6	2	8.9	36
4	4	**GENERAL ELECTRIC** Fairfield, Conn.	Jet engines, turbines, medical systems	7,268.0	26.5	55,264.0	5	13.2	26
5	5	**INT'L BUSINESS MACHINES** Armonk, N.Y.	Computers and related equipment	5,476.0	10.6	63,438.0	4	8.6	38
6	7	**E.I. DU PONT DE NEMOURS** Wilmington, Del.	Specialty chemicals	4,844.0	15.4	35,209.0	9	13.8	25
7	6	**CHRYSLER** Highland Park, Mich.	Motor vehicles and parts	4,649.0	7.0	36,156.0	8	12.9	27
8	10	**UNITED TECHNOLOGIES** Hartford	Jet engines, helicopters, cooling equipment	3,307.4	16.1	19,765.5	17	16.7	14
9	9	**CATERPILLAR** Peoria, Ill.	Heavy machinery, engines, turbines	3,291.0	12.3	11,126.0	38	29.6	5
10	8	**MCDONNELL DOUGLAS** St. Louis	Commercial and military aircraft	2,896.0	(16.6)	14,995.0	25	19.3	10
11	11	**EASTMAN KODAK** Rochester, N.Y.	Photographic equipment and supplies	2,874.0	3.7	18,398.0	18	15.6	17
12	13	**HEWLETT-PACKARD** Palo Alto, Calif.	Computers, electronics	2,634.0	27.6	11,899.0	33	22.1	8
13	14	**UNISYS** Blue Bell, Pa.	Computers and related equipment	2,400.1	2.0	10,096.9	43	23.8	7
14	16	**MOTOROLA** Schaumburg, Ill.	Communications equipment, semiconductors	2,319.0	33.1	9,620.0	48	24.1	6
15	15	**PHILIP MORRIS** New York City	Tobacco, beverages, food products	2,288.0	22.8	39,069.0	7	5.9	46
16	12	**DIGITAL EQUIPMENT** Maynard, Mass.	Computers and related equipment	2,103.3	4.2	12,866.0	27	16.3	15
17	17	**OCCIDENTAL PETROLEUM** Los Angeles	Agricultural products, coal	1,995.0	18.5	20,068.0	16	9.9	33
18	19	**ALLIED-SIGNAL** Morristown, N.J.	Aircraft and vehicle parts, chemicals	1,692.0	15.6	12,021.0	31	14.1	23
19	20	**WEYERHAEUSER** Tacoma	Pulp, paper, logs, lumber	1,574.0	12.6	10,105.6	42	15.6	18
20	21	**UNION CARBIDE** Danbury, Conn.	Chemicals, plastics	1,561.0	12.5	8,744.0	53	17.9	12
21	18	**GENERAL DYNAMICS** St. Louis	Tanks, aircraft, missiles, gun systems	1,522.1	(4.7)	10,053.2	44	15.1	21
22	22	**RAYTHEON** Lexington, Mass.	Electronic systems, aircraft	1,340.0	2.5	8,796.1	52	15.2	20
23	23	**TEXTRON** Providence	Aerospace, consumer goods	1,210.0	7.4	7,440.1	61	16.3	16
24	26	**ARCHER DANIELS MIDLAND** Decatur, Ill.	Protein meals, vegetable oils, flour	1,208.5	11.1	8,056.5	57	15.0	22
25	25	**DOW CHEMICAL** Midland, Mich.	Chemicals, plastics, consumer products	1,157.0	4.3	17,730.0	20	6.5	44
26	24	**WESTINGHOUSE ELECTRIC** Pittsburgh	Electrical products and electronic systems	1,131.0	1.4	12,844.0	28	8.8	37
27	28	**INTERNATIONAL PAPER** Purchase, N.Y.	Pulp, paperboard, wood products	1,100.0	10.0	11,378.0	35	9.7	35
28	27	**MONSANTO** St. Louis	Herbicides, chemicals, pharmaceuticals	1,070.0	(1.2)	8,681.0	55	12.3	29
29	29	**HOECHST CELANESE** Bridgewater, N.J.	Chemicals, plastics, fibers	1,039.0	7.4	6,016.0	77	17.3	13
30	40	**MERCK** Rahway, N.J.	Drugs, specialty chemicals	1,038.6	39.3	6,698.4	70	15.5	19
31	32	**MINNESOTA MINING & MFG.** St. Paul	Industrial, electronic, and health goods	1,019.0	21.9	11,990.0	32	8.5	39
32	30	**EXXON** New York City	Petroleum, chemicals	1,019.0	8.8	86,656.0	3	1.2	50
33	31	**INTEL** Santa Clara, Calif.	Microcomputer components and systems	997.9	7.8	3,280.7	137	30.4	4
34	43	**ALUMINUM CO. OF AMERICA** Pittsburgh	Aluminum products	935.0	20.8	11,161.5	37	8.4	40
35	41	**COMPAQ COMPUTER** Houston	Computers and related equipment	896.1	46.5	2,876.1	157	31.2	3
36	39	**ROCKWELL INTERNATIONAL** El Segundo, Calif.	Electronics, automotive parts	800.0	29.0	12,633.1	29	6.3	45
37	•	**XEROX** Stamford, Conn.	Copiers, printers	770.0	93.0	17,635.0	21	4.4	48
38	33	**BAYER USA** Pittsburgh	Health goods, chemicals, photographics	759.5	7.3	5,424.7	91	14.0	24
39	34	**LOCKHEED** Calabasas, Calif.	Aircraft, electronics, missile systems	754.0	9.9	9,932.0	45	7.6	42
40	•	**SUN MICROSYSTEMS** Mountain View, Calif.	Computers and related equipment	751.0	99.3	1,769.2	232	42.4	2
41	38	**DEERE** Moline, Ill.	Farm and industrial equipment	742.0	19.3	7,221.0	66	10.3	32
42	42	**HONEYWELL** Minneapolis	Control and flight systems	718.0	17.7	7,241.6	65	9.9	34
43	44	**NORTH AMERICAN PHILIPS** New York City	Components, electronics, lighting	693.6	17.9	6,202.6	74	11.2	30
44	48	**ABBOTT LABORATORIES** Abbott Park, Ill.	Drugs, diagnostic equipment	685.0	25.2	5,453.5	90	12.6	28
45	46	**AMOCO** Chicago	Chemicals	668.0	15.6	24,214.0	12	2.8	49
46	•	**TENNECO** Houston	Farm, construction, and auto equipment	644.0	28.8	14,439.0	26	4.5	47
47	•	**BRISTOL-MYERS SQUIBB** New York City	Drugs, medical devices, consumer products	638.0	N.A.	9,422.0	50	6.8	43
48	37	**FMC** Chicago	Armored military vehicles, chemicals	631.4	(2.5)	3,461.0	133	18.2	11
49	49	**ETHYL** Richmond	Specialty and petroleum chemicals	592.7	9.2	2,754.9	162	21.5	9
50	•	**COOPER INDUSTRIES** Houston	Electrical equipment and compressors	571.5	27.8	5,129.4	101	11.1	31
		TOTALS		110,081.7	13.9	979,614.6			

NOTE

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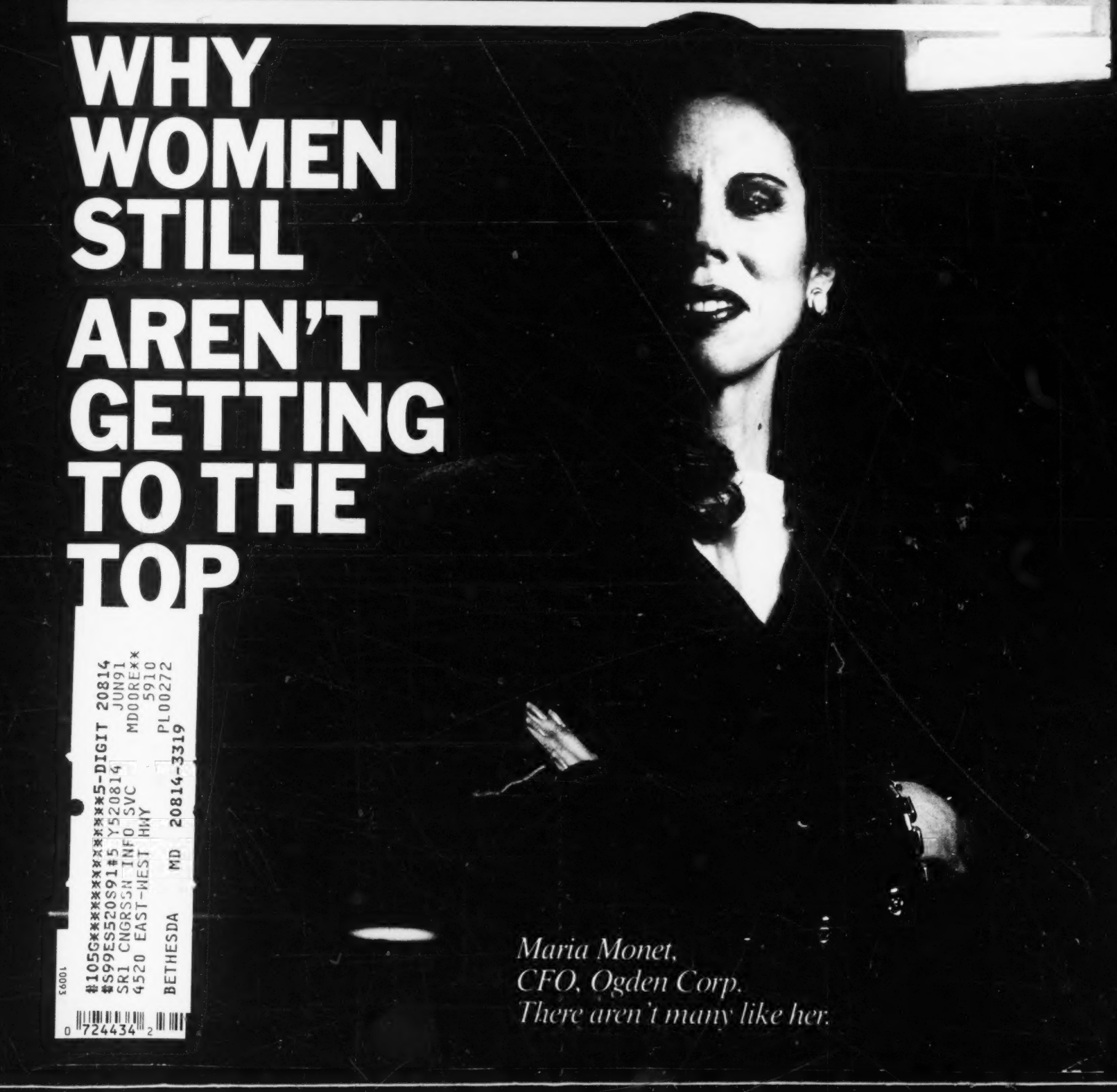

Maria Monet, CFO, Ogden Corp. There aren't many like her.

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FORTUNE

"Our best hope for the future are women who don't see the ceiling but the sky." PAGE 40

ABOVE: Boeing VP Edith Martin was told she can be frightening to work for. Photograph by Antonin Kratochvil.

COVER: Kratochvil also caught Maria Monet, who hit the glass ceiling twice before becoming CFO of Ogden Corp.

MANAGING/Cover Story

WHY WOMEN STILL DON'T HIT THE TOP 40

The cool reception women once got at the door has followed them up the organizational hierarchy. Although they have gained access to virtually every line of work and are bulging in the pipeline, only a minuscule number have top jobs at America's major companies. Some deem the sacrifices too great and deliberately leap off the fast track. But discrimination—however subtle—plays a part. *by Jaclyn Fierman*

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"I don't cook. I don't do laundry. I don't take my children to malls and museums. And I don't have close friends."

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"If activism gets to the point where investors form networks, it could be very bad."

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"The Ivy League look is over. You need to look like the guy who just stepped off the Concorde."

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"The only course that will guarantee blood in the streets is if we do nothing to improve the lot of consumers."

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"It's going to be difficult in the 1990s to get a bad American car even if you try."

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EDITOR'S DESK

HOW CAN WE ever hope to beat the Japanese? One of America's great competitive weapons is that we are far ahead of the Japanese and most other foreign competitors in at last beginning to admit women to positions of real power. With more potential leaders to choose from, we are destined to choose better leaders.

And yet. We at FORTUNE continue to ask the nagging, crucial question: Why aren't more women making it to the top in American business? Says assistant managing editor Walter Kiechel, who suggested our cover story (page 40): "Every conversation I have with women executives inevitably leads to this issue."

SHONNA VALESKA

Alison Sprout, Walter Kiechel, Susan Fraker, and Jaclyn Fierman

Writer Jaclyn Fierman and reporter Alison Sprout, helped by the Directorship information services firm, examined some 250 annual reports and 800 proxy statements to find out just how many women have broken into the top ranks. Surprisingly, says Fierman, "no other timely research existed that tracked the progress of women in upper management." Over four months she and Sprout also interviewed dozens of women managers. "I was struck by how many of them came right out and said that you can't have it all," says Fierman. Maybe not. But as a top journalist and mother of a 20-month-old daughter, she herself comes close.

Susan Fraker, who edited the article, brings a helpful perspective from a FORTUNE cover story that she wrote in 1984, "Why Women Aren't Getting to the Top." She says, "The biggest change since then is that men, particularly CEOs, seem to recognize that they've got a problem and have to do something about it. That's encouraging."

Also in this issue, we introduce the FORTUNE Global 500. Our new list, beginning on page 263, is a whole-earth catalogue of the biggest corporations ranked by sales, a melding of our list of the 500 largest U.S. industrials and our old International 500 listing of the largest industrials outside the U.S. "This is a global economy," says international editor Donald Holt, "and business people now want to know how they rank against their global competitors everywhere."

Reporters Jung Ah Pak and Sally Solo, working under the direction of chief of reporters Evelyn Benjamin, cracked the codes of accounting systems worldwide. They pulled together figures on assets, stockholders' equity, numbers of employees, sales, and profits. Meanwhile, reporter Nora Field compiled the list of the world's largest banks, on page 324. She, Pak, and Solo finished their tasks with one common question: How could we ever have gathered the numbers from all around the world before fax machines?

Marshall Loeb

MANAGING EDITOR

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WHY WOMEN STILL DON'T HIT THE TOP

Much of what was supposed to change hasn't. Some women leave their jobs because the sacrifices seem too great. But discrimination—however subtle—plays a part. ■ *by Jaclyn Fierman*

WHEN WILL WOMEN in decent numbers finally make it into the highest ranks of corporate America? The short answer: not in this millennium. By the year 2000 women will make up nearly half the labor force. But it won't be the top half. The cool reception women once got at the door has followed them up the organizational hierarchy. For all but an exceptional few, the corner office still looks as remote as it did to Rosie the Riveter.

"I USED TO THINK I COULD WORK AND RAISE A FAMILY. I REALIZE NOW IT'S HARD JUST TO DO MY JOB WELL."

Maria Monet
Chief financial officer
Ogden

Just wait, was the old excuse. A decade ago even women's staunchest male advocates said time had to pass; women lacked the seasoning and seniority to run the show. Today that explanation rings increasingly hollow. Women have gained access to virtually every line of work and are bulging in the pipeline: The U.S. Department of Labor says they make up 40% of a loosely defined demographic category of managers and administrators that covers everyone from President Bush to the person running the local Dairy Queen. But only a minuscule number of women have top jobs at America's major companies, and not many more are in the zone for promotion to those jobs anytime soon. Says Judy Mello, 46, in the early 1980s CEO of First Women's Bank in New York City: "My generation came out of graduate school 15 or 20 years ago. The men are now next in line to run major corporations. The women are not. Period."

Want proof? FORTUNE examined 1990 proxy statements of the 799 public companies on its combined lists of the 1,000 largest U.S. industrial and service companies. The cold-shower findings: Of the 4,012 people listed as the highest-paid officers and directors of their companies, we spotted 19 women—less than one-half of 1% (see chart). True, there has been progress, but it has been remarkably limited. When FORTUNE undertook a similar project in 1978, out of 6,400 officers and directors on its combined lists, which then included 1,000 industrial and 300 service companies, ten were women.

Further down the ranks the numbers are more heartening. But only slightly. To get an idea of the count—there are no authoritative studies of the number of women in upper management—FORTUNE looked through the names at the back of the annual reports of 255 major corporations. The list often goes as deep in the organization as division head and assistant vice president, and includes positions like corporate secretary that have frequently gone to women. Of the 9,293 names, 5% were women. (Admittedly, some women, especially initial users, may have escaped us, though we did pay special attention to the Leslies, Carols, and Gales. And some men may have slipped through our screen, though we did catch Mr. Shirley Beavers of First Virginia Banks.)

To once again raise a question FORTUNE posed 17 years ago when it first looked at women in the executive suite, where in blazes *are* they? Many women aren't rising to the top of large corporations because they quit or deliberately leap off the fast track. They miss their children. They miss not having *had* children. A better opportunity comes along. Or they just get tired and want out of the rat race. As comedienne Lily Tomlin quipped, "If I had known what it would be like to have it all, I might have settled for less."

For many baby-boom women, the 1980s effectively destroyed the notion that they could have it all: a full-blown career, a happy marriage, well-adjusted children, and cellulite-free thighs. Blessed with first-class educations, middle-class drive, and a sense of unlimited opportunities, these women expected a lot of themselves. They also expected equal treatment in the workplace. And they wanted to give their families—if they ever got around to having them—the same security that June Cleaver gave her children. Well-intentioned but torn asunder,

"I'VE NEVER PARTICULARLY THOUGHT OF MYSELF AS A WOMAN IN BUSINESS, SO I'VE NEVER LET IT GET IN MY WAY."

Kathryn Braun
Senior vice president
Western Digital

many understandably failed as Supermoms.

But some women were willing to tough it out, stay the course, and make the necessary sacrifices. What they have run up against can only be called discrimination. Discrimination, you scoff, in this enlightened age? Yes, says Ralph Ablon, chairman of Ogden Corp., No. 74 on FORTUNE's list of the 100 largest diversified service companies: "Sure there's discrimination. It's stupid to say there's not. Despite our intellectual efforts to deny it, prejudices exist and will exist until a new generation comes along that doesn't have them." That generation, it bears remembering, was supposed to be the baby boom, many of whose men have already assumed key decision-making roles at large companies.

At age 73, Ablon seems an unlikely harbinger of new thinking. But three years ago he appointed Maria Monet, now 40, as his company's chief financial officer, and he pays her more than $730,000 a year, making her one of the top-earning women in corporate America. Enlightenment, Ablon concedes, has come only with age and a lot of contemplation: "When I became CEO 29 years ago, I don't believe I could have been as liberal. And I couldn't have gotten away with appointing a woman as CFO. Today I could."

A recent poll of FORTUNE 1,000 CEOs shows that Ablon isn't alone in finding discrimination at work. Nearly 80% of 241 respondents to a survey conducted by Catalyst, a group that does research on women in the workplace, said there are identifiable barriers that keep women from reaching the top. No, they say, women do not lack the technical skills to make it. After all, they have been going to the same schools as their male counterparts and now represent over half of all college students, 37% of graduate business students, and roughly 40% of law students. The problems, said an astonishing 81% of the CEOs who acknowledged the existence of barriers, are stereotyping and preconceptions.

REPORTER ASSOCIATE *Alison Sprout*

This is a subtle, tricky, but nonetheless pernicious form of discrimination, more apparent in the result—just look at the numbers—than in anyone's conscious intentions. Ask the typical male executive if he is prejudiced against women, and he will roundly deny it. But when it comes to choosing among several rivals for a top corporate job, he chooses a man. The next time, he does the same thing. And the next. Even Ablon, who recently retired as CEO of Ogden, chose not Monet but a man—his 40-year-old son, Richard—to succeed him.

> "HE TOLD ME TO WALK MORE FEMININELY, TALK MORE FEMININELY, WEAR MAKEUP, AND HAVE MY HAIR STYLED."
>
> **Ann Hopkins**
> **Senior budget officer**
> **The World Bank**

What nonsense, you counter—if women don't get top jobs, they don't deserve them. Undoubtedly so in many cases. Besides, the volume of the uppermost quarter of any pyramid is only 1.6% of the whole, a geometric fact that automatically eliminates most women—*and men*—who aspire to the top. True also that the average CEO is in his mid-50s and most business schools began admitting women in significant numbers only in the early 1970s, which puts them around fortysomething today.

But John Reed had no trouble seeing over his desk six years ago when he was promoted to CEO of Citicorp at age 45. Nor does Cigna CEO Wilson Taylor, who is now 46. Even allowing that many women still aren't old enough or talented enough to be CEO, more should be joining their male contemporaries in the executive dining room. CEO John Mascotte of Continental Corp., a property and casualty company with $14 billion in assets, was stunned when he started counting. Two-thirds of his 15,000 employees are women, but nine out of ten senior managers are men. Says he: "It seems idiotic if we're investing in people but making it impossible for them to advance. Are we sending out signals that women need not aspire to the top?"

The signals may be no more than a slight rustling of discomfort, a bit of awkwardness in a man's body language. It may seem surprising in an era sometimes labeled postfeminist, but working closely with the opposite sex continues to make many male executives uncomfortable. Listen to Ellie Raynolds, a partner at the headhunting firm Ward Howell International: "Corporate males still don't know how to deal with women. They are afraid to yell at them or to give them negative feedback. It's as though they think they are yelling at their mothers or their wives. Men often worry women will run from the room in tears, or worse yet, yell back. They're not really sure the women will come through for them. They just don't trust them as much as the guys with whom they talk football."

Haven't we heard this before? But after ten years of supposed progress, too many of the old, uncomfortable ways persist. The offense may be as banal as the mere existence of Merrill Lynch's Chowder and Marching

Society, a group of men who get together now and then for drinks and dinner. Or it may be tougher to read. "You'd hear things," says Deborah Farrington, 39, who went to Merrill Lynch after graduating from Harvard business school in 1976. "There were innuendoes. If you wore dark blue suits with floppy bow ties, there would be no talk about whether you were being flirtatious. But if you were attractive and dressed stylishly, people took you less seriously." Farrington, who spent a decade at Merrill, feels she can more easily be herself as head of corporate finance in Hong Kong for Asian Oceanic Group, a small merchant bank.

Try as women have to fit into the male business milieu, men still think they do a lousy job of it. Many believe corporate women are weak in interpersonal skills, a dimension that's largely ineffable but critical to achieving a high corporate position, where competence is assumed and chemistry often becomes key. Sometimes men see women as pushovers. More often they find women overbearing. "The most common lament of top management men is 'She's too shrill. She's too aggressive. She's too hard-edged,' " says Kenneth Brousseau, president of Decision Dynamics Corp., a human resources consulting firm in Santa Monica, California.

WOMEN POINT TO the persistence of precisely this attitude as the most pernicious example of discrimination in the workplace. If they are too feminine, they are viewed as softies; too masculine, and they're abrasive. "It's as if we're being asked to play a Beethoven sonata in two octaves," says Arlene Johnson, who directs work force

NAME	AGE	COMPANY	TITLE	1989 CASH COMPENSATION	FAMILY STATUS
Rosetta Bailey	55	Citizens Federal Bank	Senior vice president	$123,272	Married, two children
Jill Barad	39	Mattel	Division president	$504,923	Married, two children
Ilene Beal	44	BayBanks	Executive vice president	$163,020	Single, no children
Cathleen Black	46	Gannett	Executive vice president	$600,000	Married, one child
Kathryn Braun	39	Western Digital	Senior vice president	$255,365	Married, one stepchild
Jean Carrick	43	Delta Woodside Industries	Corporate controller	$76,342	Divorced, no children
Patricia Dawley	52	Anchor Savings Bank	Executive vice president, secretary	$139,500	Divorced, no children
Katharine Graham	73	Washington Post	Chairman, chief executive officer	$739,874	Widowed, four children
Jane Greer	51	Delta Woodside Industries	Vice president	$166,898	Divorced, no children
Bernice Lavin	64	Alberto-Culver	Vice president, secretary, treasurer	$513,746	Married, three children
Nina McLemore	45	Liz Claiborne	Senior vice president	$600,000	Married, no children
Debbie Miede	34	Downey Savings & Loan	Senior vice president	$140,892	Married, three children
Maria Monet	40	Ogden	Chief financial officer	$733,617	Married, no children
Hazel O'Leary	53	Northern States Power	Senior vice president	$174,170	Widowed, one child
Carole St. Mark	43	Pitney Bowes	Division president	$376,946	Divorced, no children
Mary Sammons	43	Fred Meyer	Senior vice president	$253,847	Married, one child
Marion Sandler	59	Golden West Financial	President, chief executive officer	$665,357	Married, two children
Irene Adams Staskin	60	Kelly Services	Senior vice president	$214,500	Married, two children
Faye Widenmann	41	Pinnacle West Capital	Vice president, secretary	$82,889	Divorced, no children
Olive Beech	74	Beech Aircraft	Chairman	$203,000*	
Carol Goldberg	47	Stop & Shop Cos.	Division president	$86,000	
Katharine Graham	61	Washington Post	Chairman, chief executive officer	$300,000	
Bernice Lavin	52	Alberto-Culver	Vice president, secretary, treasurer	$96,000	
Joan Manley	45	Time Inc.	Vice president	$203,000	
Dorothy Moore	50	Michigan General	Secretary	$55,000	
Juliette Moran	61	GAF	Executive vice president	$112,500	
Vera Neumann	67	Manhattan Industries	Division chairman	$115,000	
Marion Sandler	47	Golden West Financial	Vice chairman	$144,400	
Rose Small	65	Bluebird	Vice president	$41,600	

These are the only women among the highest-paid officers and directors of the publicly held FORTUNE 500 service and industrial companies, as listed in their proxies. The 1990 women are about a decade younger than those from 1978, but they still make up less than one-half of 1% of the total.

SOURCE: *DIRECTORSHIP* DATABANK

*1977 cash compensation for Olive Beech and the nine other women on the list.

studies for the Conference Board, a business research organization in New York. "We need the whole keyboard to show our range."

The recently decided case of Ann Hopkins, 46, formerly a management consultant at Price Waterhouse, affords a striking example of how such stereotyping works. In May a federal judge ordered the accounting firm to make Hopkins a partner and give her $370,000 in back pay because it had unfairly discriminated against her. The firm, which counts 27 women among its 876 partners, recently filed an appeal.

What happened: In 1982, Hopkins and 87 colleagues, all men, came up for consideration as partners. Though in the previous few years she had played a big part in securing some $40 million in contracts for the firm, an amount she says was more than that of any other candidate for partner in 1982, she was not among the 47 people promoted; Price Waterhouse will neither confirm nor deny Hopkins's claim. "Any woman who can be a success with her clients should qualify as partner," says Cynthia Turk, 37, who recently resigned as partner from a Price Waterhouse competitor, Deloitte & Touche, to set up her own consulting firm. "This was a clear case of discrimination."

"I'M TOLD I CAN BE FRIGHTENING TO WORK FOR, BUT I'M STILL ONLY 5 FEET 5 INCHES AND WEIGH 100 POUNDS."

Edith Martin
Vice president
Boeing

The court, in agreeing, found particularly damning a remark made by Hopkins's mentor and chief supporter. "He told me to walk more femininely, talk more femininely, wear makeup, have my hair styled, and wear jewelry," says Hopkins, now a senior budget officer at the World Bank. Hopkins, who has two sons, 11 and 12, and a 14-year-old daughter, says the advice was largely useless: "I already wear jewelry and high heels, and I go to the beauty parlor. But I'm allergic to makeup." Even if she weren't allergic, Hopkins says applying the makeup would be difficult because she can't see without her trifocals.

Faced with this kind of prejudice, women who set their sights on top jobs and actually get them develop 20-20 vision when it comes to corporate folkways. "They understand that competence and a bus token will only get them across town," says psychologist Dee Soder, president of New York's Endymion Co., which counsels women and men who want to scale the corporate Everest. The experiences of the women on FORTUNE's best-compensated list, plus war stories from Hopkins and other high-achieving women identified by FORTUNE, show just how tricky it is to navigate the ascent.

Go-getters who stand out in the ranks can *stick out* at the top. "When I first started out, I was extremely rough around the edges," says Lois Juliber, president of Colgate-Palmolive's Far East/Canada division. "Bully wouldn't be the right word, but I was the toughest of the tough. I didn't listen well. I had to mellow and learn to trust people."

IT MAY HELP to regard the experiences of women in business as akin to infiltrating an alien world. Maria Monet of Ogden has been feeling her way and finding it since she emigrated to the U.S. from Portugal when she was 5 years old. "I grew up trying to fit in with a different culture. I didn't speak English when I went to kindergarten," she says.

Monet had her share of setbacks on the corporate climb. Twice she hit the proverbial glass ceiling, a barrier that enables women to glimpse but not grasp the corner office. A lawyer by training, she began as an associate at the Wall Street firm of Shearman & Sterling in 1974. But by 1980 it was still largely a white-shoe—no heels—firm, and Monet failed to make partner.

Investment banking, she thought, would be different. After 18 months of round-the-clock dealmaking at Lehman Brothers, she

took stock: All the partners were men. So when an Ogden executive whom she met on a deal offered her a job, she leaped again. Monet quickly established herself at Ogden by reducing the time between the start and close of a deal from two years to six months. In three years she rose to chief financial officer.

IF WOMEN WHO are puzzling over appropriate boardroom behavior feel as if their heads are spinning, so do male managers. Just what do women want, anyway? The vast majority have lobbied aggressively for special treatment. And they are getting it. Hewitt Associates, a benefits and compensation consulting firm in Chicago, found that 56% of 259 major employers offer some sort of child-care aid, 56% allow flexible scheduling, and 42% grant unpaid parental leave.

But along comes a select group of women who want no special favors—just a top job, thank you. These women figure their best shot at success is at gender-blind companies that make no concessions to their needs and require them to work the same hours as men. "There is no such thing as job sharing or part time at the top," says Phyllis Swersky, 39, executive vice president of AICorp Inc., a computer software company outside Boston. Swersky began holding meetings in her living room two days after she came home from the hospital after delivering her third child.

America's most successful businesswomen wave not the feminist banner but the corporate one. "I've never particularly thought of myself as a woman in business, so I've never let it get in my way," says Kathryn Braun, 39, senior vice president of Western Digital, a major supplier of personal computer parts in Irvine, California.

> "WHEN I FIRST STARTED OUT, I WAS EXTREMELY ROUGH AROUND THE EDGES. I HAD TO LEARN TO TRUST PEOPLE."
>
> **Lois Juliber**
> **Division president**
> **Colgate-Palmolive**

These women have interpersonal skills sufficient to finesse them through difficult situations. Edith Martin, 45, who was a Deputy Under Secretary of Defense under President Reagan and is now a vice president at Boeing, recalls the time she went on an executive outing while at Control Data. The luncheon grill was an extension of the men's locker room. Rather than sitting around with a bunch of towel-clad hearties, Martin decided to hit tennis balls while the men ate. "Yes, there are awkward moments," she says. "You can either walk off with a hot head or laugh it off. But after you have a couple of drinks and everyone laughs it off, it brings you closer." Moral: Greet the wrong gesture with the right attitude.

In breaking through stereotypes, the adage that line jobs are the straightest line to the top still holds. Women should take a lead from men and steer clear of dead ends like personnel and public relations. The most successful have typically sought out risky, thankless projects whose results become immediately apparent on the bottom line. "You have to prove you're a leader. You have to show you're willing to steal second base. Women don't project that ability well," says Mary Rudie Barneby, 38, who built from scratch a $3 billion corporate retirement plan business for Merrill Lynch. She now heads a similar division for Dreyfus Corp. in New York City.

Maria Monet stole second while working at Lehman Brothers. Her client, Ogden Corp., wanted to build a waste-to-energy plant in Oregon, but the county thought the financing it would have to provide was too burdensome. Monet calculated that if the county floated variable- rather than fixed-rate bonds to pay for construction, it could save about $5 million. "I was so new at investment banking, I didn't even realize the problems I had created," she says. "Financing a waste-to-energy project whose future revenues were predictable with bonds whose interest rates were not was unheard of." But Monet persisted, won the bankers' confidence, and caught the eye of Ogden Chairman Ablon. Her creative financing set a new industry standard and, she's convinced, clinched her career.

What Western Digital's Braun calls her acid test entailed resisting Wall Street naysayers to buy the assets of Tandon Corp.'s faltering disk drive division in 1988. Braun decided she had no choice: Without disks, she predicted, Western Digital's bread-and-butter business—computer information storage—wouldn't survive. She felt sure that the next generation of storage chips would reside directly in the disks. She guessed right. "We managed our way through the crisis," she says.

ONE OF the explanations still cited for why women fail to get to the top is that they don't stick to it; they leave jobs more often than men do. Conclusive evidence on the point is hard to come by. But women do seem more willing than men to act on their desires for something else, perhaps because they are so acutely aware of the personal sacrifices they are making to work. When Opinion Research Corp. of Princeton, New Jersey, asked 26,500 managers in seven large companies whether they intended to quit their jobs in the next year, 17% of women said yes, compared with 11% of men.

If women would just hang in there and be patient, the thinking goes, more might reach their goals. Perhaps, allows Dreyfus Corp.'s Barneby, who in 14 years rose from clerical worker to one of the highest-ranking women at Merrill Lynch. "If I had waited, I think I would have had a shot at the top rungs," she says. "But I got tired of pushing. My shoulder started to hurt."

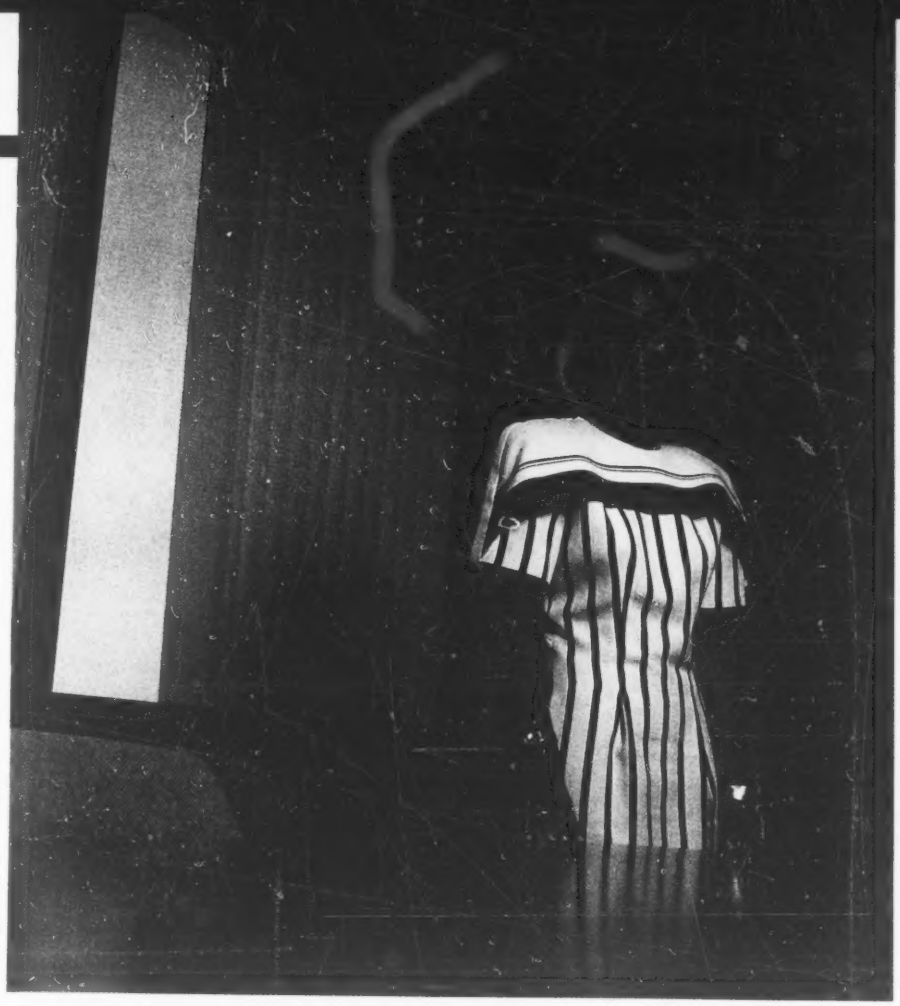
Don't Blame the Baby is the name Wick & Co., a Delaware consulting firm, gave its recent study of why male and female managers change jobs. The Wick research, a survey of 110 executives, found that most women quit jobs not to rock the cradle but to find greater career satisfaction somewhere else.

Nonetheless, virtually every woman interviewed for this article acknowledged the heavy—and sometimes painful—demands of juggling family or personal life and the fast track. Observes John Rosenblum,

dean of the University of Virginia's Darden graduate school of business administration: "Women are discouraged about their ability to realize a vision of life that has family, career, and happiness all in the same sentence."

In choosing to make the corporate climb, Monet let some of life's other options go. She has no children and sees her husband, a general partner at Montgomery Securities in San Francisco, once a month. She reports to work every morning at seven at the New York headquarters of Ogden, which operates sports arenas, power plants, and convention centers. She eats lunch at her desk and tops off her 11-hour day with a 1½-hour workout at a nearby health club. "I used to think I could work, get married, and raise a family," she says. "I realize now it's hard enough just to do my job well. It was a rude awakening."

One very senior woman at a large consumer products company asked not to be quoted by name when she spoke of the price she had paid for success. "I would never want my mother to know how much it hurts me to be childless," she says. She is hardly alone. Nearly half the women on FORTUNE's 1990 list of highly paid women are childless, five are divorced, and one never married. Claudia Goldin, the first tenured economics professor at Harvard, feels she might not have achieved her position had she had a family. "I'm at the top of my profession now, and it took a tremendous amount of concentration and focus in a brief period of time. If I were married and had kids, I probably wouldn't have had the energy."



"I DON'T COOK. I DON'T TAKE MY CHILDREN TO MALLS AND MUSEUMS. AND I DON'T HAVE ANY CLOSE FRIENDS."

Phyllis Swersky
Executive vice president
AICorp

WOMEN WHO DO try to combine traditional and fast-track lifestyles need a rock-solid infrastructure at home. Swersky of AICorp has a live-in nanny to care for her three children, ages 8, 5, and 4. She also has a live-in housekeeper and a supportive husband who runs his own accounting firm. Says Swersky: "I don't take care of the house. I don't cook. I don't do laundry. I don't market. I don't take my children to malls and museums. And I don't have close friends."

She typically leaves the house before 8 A.M. and returns around 7 P.M. "I am often gone longer, not shorter, than this," she says. "I am frequently too tired to tell my husband about my day, listen to him tell me about his, or play with the children. It was a major challenge just to figure out a simple hair style and makeup for myself."

On the question of when to bear the brood, women are often not in sync with their employers. "From an organizational point of view, the early 20s is the best time to have children," says Mary Anne Devanna, associate dean of the Columbia University graduate school of business. "Employers don't care what people do before they enter the work force." Probably so, but many women don't feel ready at that age. Says Blair Sheppard, 38, director of the human resource management center at Duke University's Fuqua graduate school of business: "The whole career ladder in the U.S. is predicated on the life cycle of a man. We tell people to prove themselves between 30 and 38. But that's when executive women tend to have babies."

The lesson: Having it all is easier if you don't insist on having it all at once. Rosetta Bailey, 55, now senior vice president at Citizens Federal Bank in Florida and a member of FORTUNE's 1990 list, worked as a receptionist and teller in the bank for 15 years while raising two children. "By the time I got to a management level, it wasn't necessary for me to be with my children all the time," she says.

Ambitious women would do well to choose employers whose expectations are compatible with their own. Banking has always been fertile ground, perhaps because women have been paying their dues for years and now represent 91% of tellers, for instance. High-tech companies and small startup ventures too bent on survival to be exclusionary are also women-friendly. "There is no old boy network in my industry, because it's too new," says Western Digital's Braun. "So women rise more easily through the ranks."

In a business where product life cycles are as short as two years, qualified women—and men—tend to be promoted more rapidly than colleagues at mature consumer products or industrial companies. Braun

headed for Southern California 17 years ago, a biology and psychology graduate fresh out of Duke University. Her first job was on the assembly line of a minicomputer manufacturer. When she realized that women weren't being promoted into sales, she quit and joined Western Digital in 1978 as a technical support person. Today she heads the company's most profitable division, which so far this year has sold $200 million of intelligent disk drives and other storage products for personal computers.

No business is as receptive as the one whose CEO feels comfortable with women at his side. "If I were working for my first employer today, I would still be a middle manager," says Ilene Beal, one of three executive vice presidents at BayBanks, outside Boston. Of her current boss, CEO William Crozier, she says, "He only cares about getting the job done. Maybe it's because he's married to a Ph.D. who has more degrees than he does."

Will the glass ceiling ever disappear? Yes, if history is any guide. But it won't crack and fall all at once, or even soon. For most of the first half of this century, married women were almost unemployable: they couldn't even get office jobs. When they entered the work force in large numbers during World War II, it was not so much because men wanted to hire them as because the country needed them.

The next big wave of women—mostly baby-boomers—began working in the 1970s. Men were more receptive to them, but ambivalence abounded; as recently as 1978 there were urinals in the ladies' rooms at Harvard business school. And women managers still make only 64% of what men do.

Harvard's Goldin, for one, argues that conditions for working women will gradually get better. "While there is still reason to clamor, women have made great strides, especially in the past ten years," says Goldin, author of a new book called *Understanding the Gender Gap*. She notes that in the Department of Labor's broad management category, the gap between men's and women's wages narrowed 18.5% between 1979 and 1988.

Women who look at the world not as historians but as victims may scoff at Goldin's perspective. They are also the ones least likely to survive in the corporate jungle. "Our best hope for the future are women who don't see the ceiling but the sky," says Goldin. Indeed, the best defense in a hostile world is to shed the defensive posture. "A group wants to feel that you're part of it," says Monet. "If you don't look like them, you already have something to overcome. Most men just haven't had enough experience working with women."

"I AM AT THE TOP OF MY PROFESSION. I DON'T KNOW IF I COULD HAVE MADE IT IF I WERE MARRIED AND HAD KIDS."

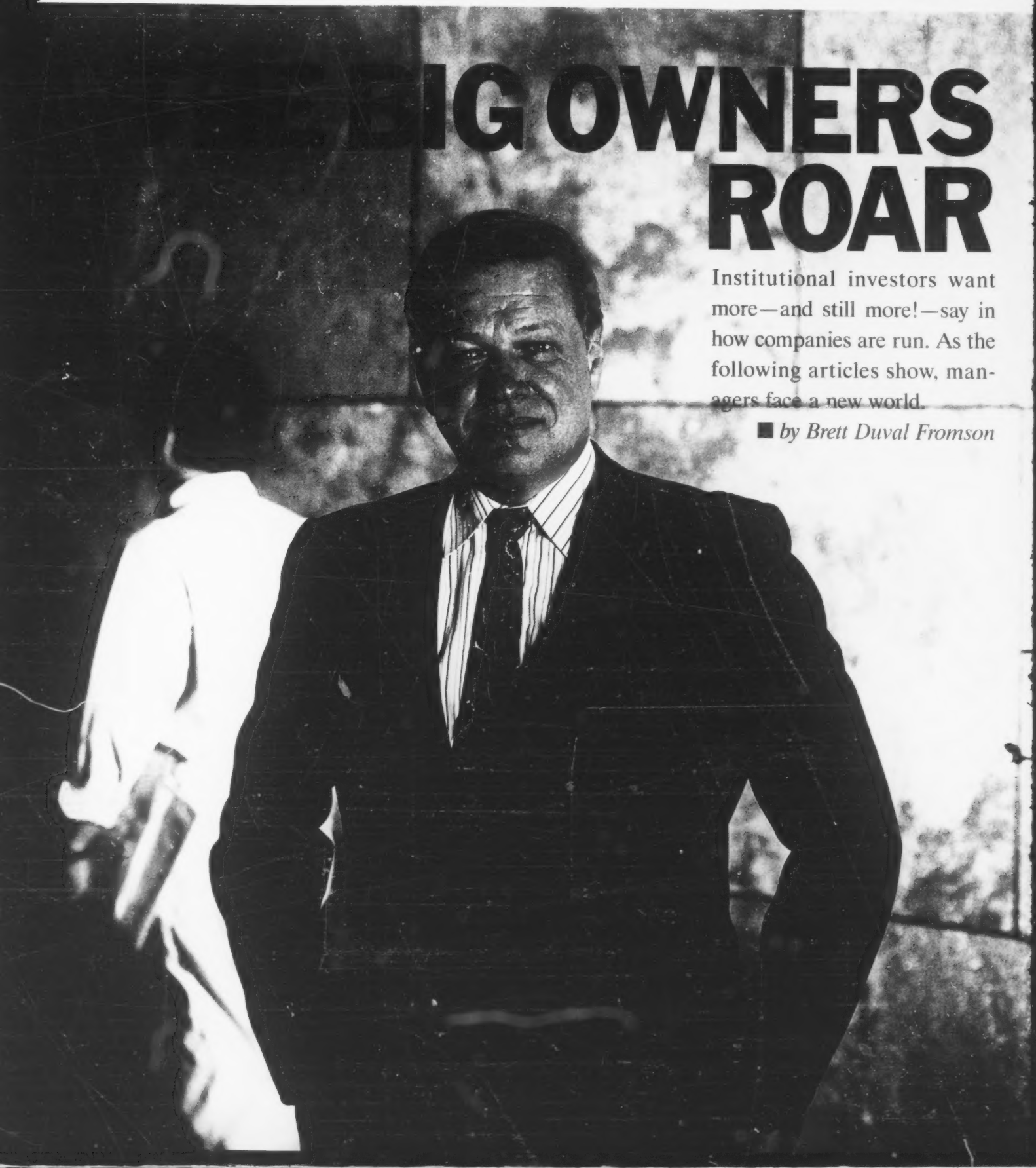
Claudia Goldin
Professor of economics
Harvard University

In the meantime, what can parents do to nudge things along? For starters, they should emphasize self-reliance in their daughters. Superachievers share a gritty, pioneering spirit, says New York psychologist Dee Soder. "I have yet to meet a truly successful woman who didn't have a courage-building experience in her childhood." Typical is Ilene Beal of BayBanks, whose mother died when she was a child. "My father brought me up to think I could do anything. If I broke a toy, he taught me to fix it. He brought out the take-charge part of me."

Another small step: Parents should encourage their daughters to take as much interest in baseball and basketball as in Barbie. Not only would the girls gain fluency in the sports-speak so common in business, but according to a 1986 survey of 2,043 adults by *Sports Illustrated*, one of FORTUNE's sister publications, sports lovers are more successful in life than nonfans. The poll also found that sports-minded people are wealthier, and perceive themselves as wittier, more popular, smarter, and more competitive than people who don't care about keeping score.

Parents might even inspire their daughters with Dr. Seuss's current best-seller, *Oh, the Places You'll Go!* "Remember that Life's a Great Balancing Act," says the man who speaks volumes to children. He urges: "On you will go though the weather be foul. On you will go though your enemies prowl . . . Onward up many a frightening creek, though your arms may get sore and your sneakers may leak . . . And will you succeed? Yes! You will, indeed! (98 and 3/4 percent guaranteed.)"

The odds for grownup women, of course, are slimmer, though demographics are on their side. Women and minorities are already the majority in the workplace, and a competitive corporate America will eventually have little choice but to include them in their leadership pool. Until then—for the next few decades, anyway—women may want to heed the following checklist for success, which itself, alas, carries no guarantee: Look like a lady; act like a man; work like a dog. F



BIG OWNERS ROAR

Institutional investors want more—and still more!—say in how companies are run. As the following articles show, managers face a new world.

■ *by Brett Duval Fromson*

DON'T RELAX, managers of America. Junk bond raiders may be less menacing than in the Eighties, but marching right behind them are far mightier challengers for corporate control: the vast institutions that own $1 trillion—you heard that number right—of your equity. That's seven times all the money raised via junk bonds in the Eighties. True, pension funds, mutual funds, insurance companies, and other institutions have been snoozing so deeply for so long that it's tempting to shrug off the threat. But that would be a serious mistake. Pension power will be one of the most important business forces of the Nineties.

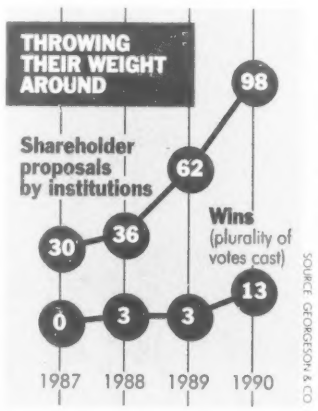
Owning more than half the stock in scores of FORTUNE 500 companies (see table), institutions are going after mediocre managers everywhere with their most potent weapon: proxy contests or the threat of them. So far this year institutions have put forward a record 98 shareholder resolutions, of which a remarkable 13 won a plurality of votes. Just three years ago institutions submitted 30 shareholder proposals, and not one earned a plurality (see chart, this page). These figures understate the institutions' impact because several proposals were dropped after management agreed to adopt them rather than face embarrassing public debate and possible defeat.

The institutions' recent victories have humbled executives of huge companies. At Honeywell, two of the biggest public pension funds, the California Public Employees' Retirement System (Calpers) and the Pennsylvania Public School Employees' Retirement System, helped launch a proxy battle that led management to restructure the company—with highly successful results. A host of public and private funds played Lockheed management off against would-be raider Harold Simmons to win seats on a reconfigured board and prompt bylaw changes that favor long-term shareholders. The Wisconsin Investment Board proposed putting Champion International's poison pill to a vote and won, despite strong opposition by the corporation's top executives, who are now under increased pressure to get their laggard company moving.

Why are institutions suddenly taking off the gloves? The primary reason is that they no longer have an easy exit from the market. So big are their portfolios that if they needed to sell a block of stock in a hurry, prices would fall faster than the Communist parties in Eastern Europe. Says Patricia Lipton, head of Wisconsin's Investment Board, responsible for $23 billion of mostly retirement money: "Rather than throwing up our hands and saying, 'This company is doing something we don't approve of—let's sell the stock,' we have to stay and work with management." Also, the Department of Labor, which supervises pension fund investment practices under the 1974 Employee Retirement Income Security Act (Erisa), recently told them that pension fund managers must vote in the best interests of their beneficiaries.

Perhaps more important, institutions see shareholder rights being whittled away all around them, and they want to fight the trend. Many major pension fund managers point to legal precedents such as last summer's Time Warner decision in the Delaware courts, which supported management's right to reject a takeover bid in favor of a long-term strategy. They think such decisions help entrench management. They also dislike a recent federal appeals court ruling that stopped the Securities and Exchange Commission from intervening on behalf of shareholders when companies issue stock with super voting rights. That's a device that gives extra votes to existing shareholders, often used to protect management against raiders.

The institutions are especially angry about the rash of new state antitakeover laws—in particular Pennsylvania's, which permits directors to favor the interests of so-called stakeholders, such as employees and customers, over those of owners. Says Robert Monks, the former Labor Department Erisa chief who now advises institutions: "These decisions make you sick to your stomach. They essentially strip away the rights of the shareholder and turn common stock into 'junk stock.' "



Public funds, which provide pension benefits for teachers and other public employees, are leading the charge. Preeminent among them is Calpers, America's largest pension fund with assets of $58 billion, headed by Dale Hanson. Public funds put forward half the shareholder proposals in the recent annual meeting season. So far the private funds, which cover corporate employees, remain meek in comparison.

The reason requires a bit of explanation. Any corporation can manage its employee pension fund and thereby vote all the proxies—or it can hire professional investment firms. In that case the professionals vote the proxies unless the corporation specifically takes back voting authority for itself. Most corporations want nothing to do with the voluminous record keeping and the legal responsibilities of managing their own pension funds, so the vast majority employ outside money managers and happily let their hired guns vote the pension fund's shares.

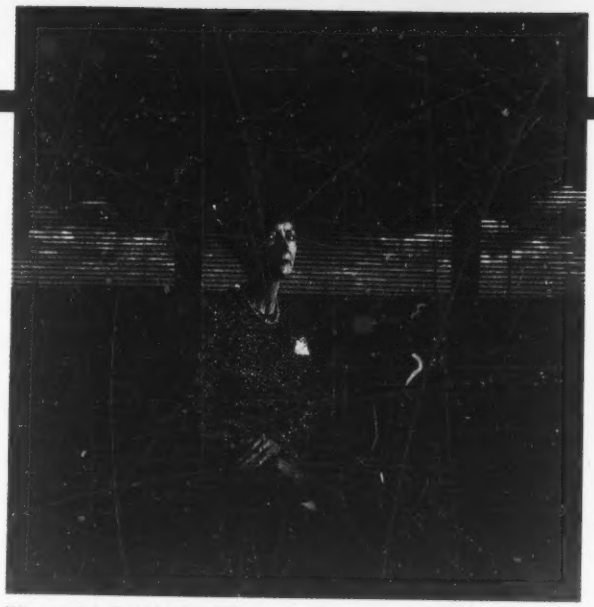
THE INDIVIDUAL money manager also tends to be reluctant to vote against corporate managements. If he does so, he may find that corporate clients, in solidarity with the money manager's targets, start removing their funds from his care. One of the more courageous opponents of antitakeover measures put in by companies, Dean LeBaron of the Boston-based investment management firm Batterymarch, has felt the sting. Despite a respectable 18.3% average annual return to clients in the past five years, Batterymarch has lost assets in part because of corporate displeasure with LeBaron's principled stand. But public funds are harder to retaliate against and worry far less about interfering with companies. They generally retain all proxy voting authority, although they are not required to.

Public or private, fund managers are as yet unsure how best to use their voices. Some emphasize "constructive dialogue" with management. Others cry for representation on the boards. Still others howl about poison pills, staggered boards, or confidential proxy voting. The basic demand is the same: more managerial accountability to shareholders.

Sometimes, instead of initiating a move, institutions follow another's lead with crushing force. That's what happened in their most notable success to date, at Honeywell, the Minneapolis maker of industrial controls. A month before the 1989 annual meeting, Edward Lampert, then a 26-year-old investment manager closely allied with Texas investor Richard Rainwater, read in the Honeywell proxy of two disturbing antitakeover proposals by

America's biggest stockholder: Dale Hanson heads California's $58 billion pension fund.

PHOTOGRAPHS BY ABE FRAJNDLICH—SYGMA



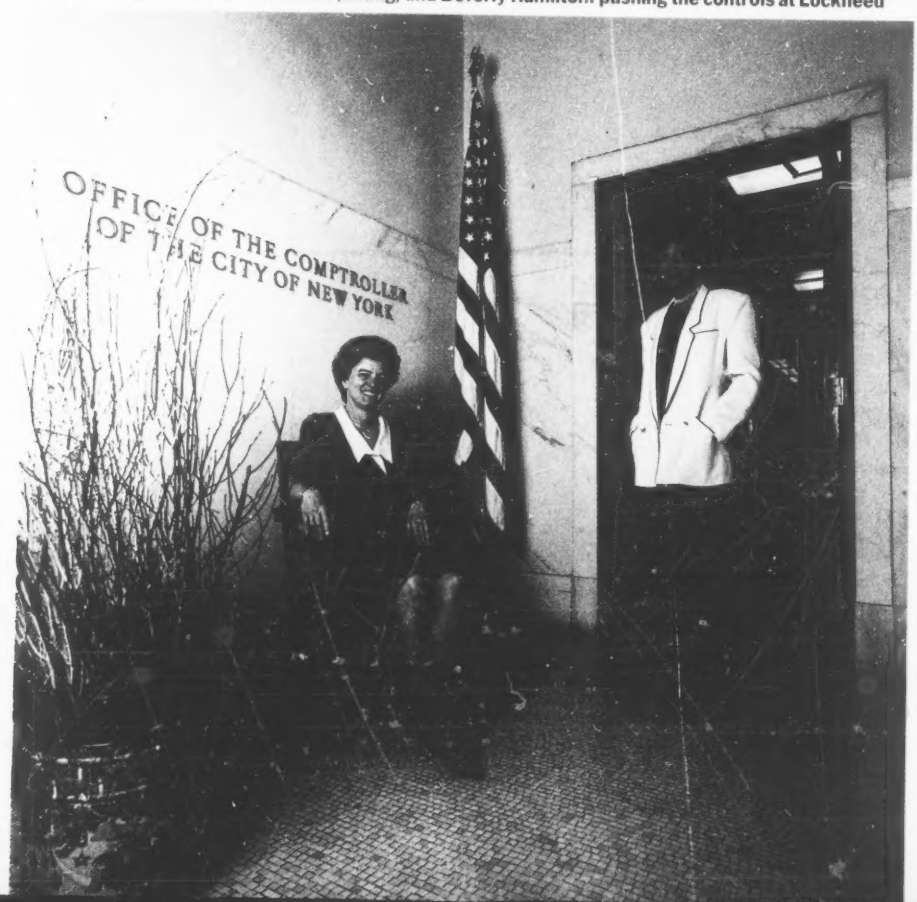
Wisconsin's Pat Lipton is challenging Champion International.

management: to stagger the board of directors and to eliminate the owners' rights to take action, such as changing the company's bylaws, without involving management. Rainwater and Lampert owned 2.1% of the stock and planned to buy more.

So they turned to the institutions for help. In an unprecedented challenge to management by pension funds, Calpers and the Pennsylvania fund agreed to cosponsor the Rainwater proxy fight against the management proposals. Consultant Monks introduced the allies to one another. He enlisted the institutions by emphasizing that Rainwater and Lampert didn't want to take Honeywell over. This reassured the pension funds, which had no wish to throw out management. Says Hanson of Calpers: "We happen to be judicious about who we do business with."

The dissidents waged a low-key campaign through personal telephone pitches to as many big shareholders as they could reach. Result: Both of management's proposals lost. Honeywell said publicly that it had no plans to change its strategic focus. But privately, it had already arranged a confidential meeting between the two sides at which CEO James Renier didn't disagree with Rainwater and Lampert's suggestion that he focus the company on its lucrative controls business. He is doing that now by getting Honeywell out of money-losing defense operations and by improving profit margins in controls. Results could begin to get better this year. Honeywell's share price has surged from $60 to a recent $102.

New York City's Elizabeth Holtzman (sitting) and Beverly Hamilton: pushing the controls at Lockheed



INSTITUTIONAL investors often also take action on their own, and cleverly. They were not happy with the way CEO Daniel Tellep was running Lockheed, the troubled defense contractor. He took over in early 1989 and promised restless shareholders—46% of the stock is owned by institutions—that while there might be tough times ahead, in the long run his restructuring plan would yield excellent returns. He was right about the tough times. Lockheed took a $490 million write-off last year, and the share price dropped like a wounded whirlybird from $54.75 to $35.75. The institutions launched a fleet of shareholder proposals that would remove the company's poison pill, adopt confidential proxy voting, and opt out of the Delaware antitakeover statutes by amending the company's charter. Tellep and the board opposed them all.

Separately, raider Harold Simmons had bought 19% of the company's stock and asked for six seats on the 15-person board. Management said no, so Simmons announced his own slate of candidates for the board. Looking at the competing slates, the institutions took the role of kingmaker. You want us to support your candidates for the board? Then you'd better support our shareholder proposals. Lo and behold, Simmons did just that.

When the votes were counted, Tellep lost on the proposals, but his board candidates won. Seeing the institutions' power, he offered them three representatives on an expanded board, in part because Beverly Hamilton, the deputy comptroller of New York City responsible for its $38 billion pension funds, met with him. She told him that Lockheed's board did not have a majority of independent outsiders—people with no business links to the company—and that had to change. Hamilton's boss, New York City comptroller Elizabeth Holtzman, adds, "We also wanted the board to recognize that new global circumstances mean Lockheed must be prepared to adjust its business plan to reflect this new reality."

Tellep has since begun shutting down a redundant aircraft factory in Southern California and shedding 6,000 employees. Profits rose 11% on an 8% sales gain in this

REPORTER ASSOCIATES *Antony J. Michels and Mark D. Fefer*

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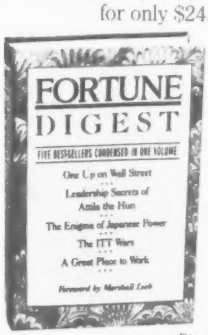

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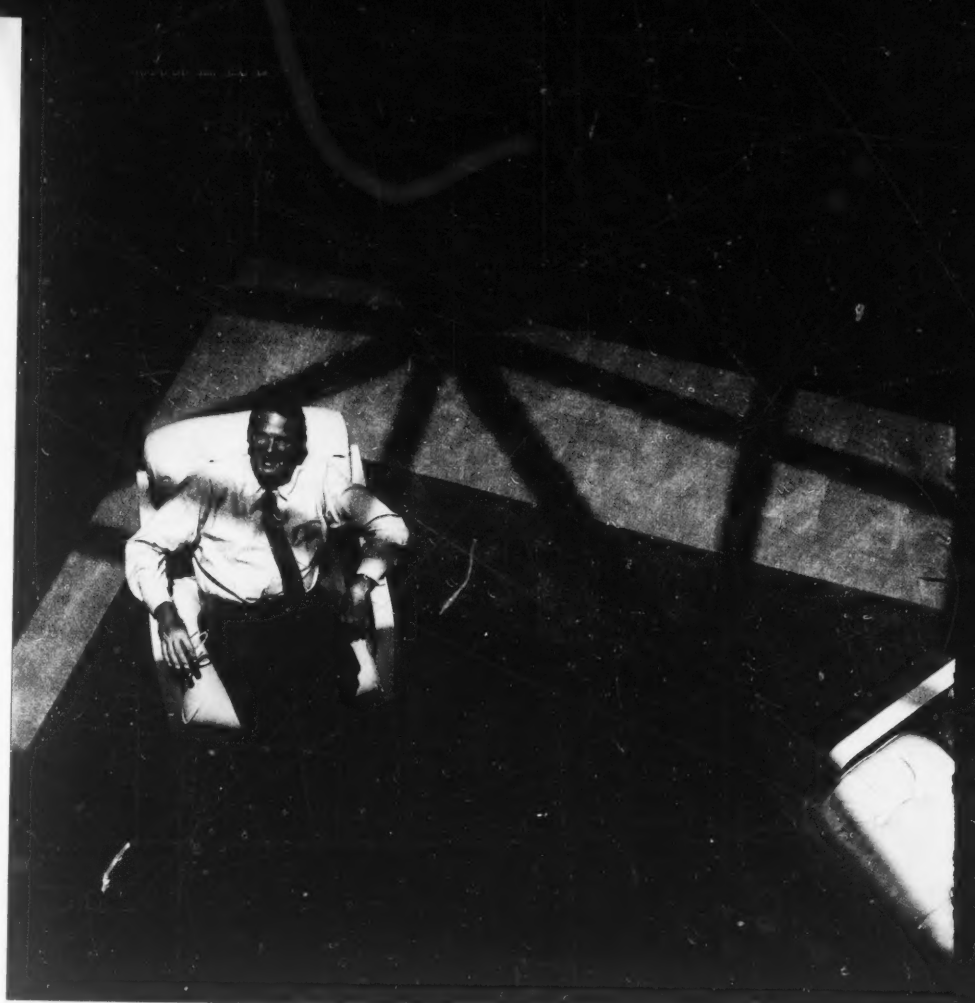

At the nexus: Consultant Bob Monks helps institutions join together to assert their rights as owners.

year's first quarter. Yet shareholder pressure on Tellep remains. Says a major institutional owner: "We see that Simmons hasn't sold his stock, we haven't, and the other large holders haven't." If things don't improve still more, he adds, "next year the vote might be different."

Institutions are tightening the screws right now on Champion International, an asset-rich paper manufacturer with mediocre earnings and a stock price—recently about $31—below what many analysts say is the asset value of the company's timber properties. CEO Andrew Sigler is an outspoken advocate of managing for the long term, but he has not delivered to his shareholders. The stock's total return over the past decade has averaged 6.4% annually, considerably less than investors could have received from riskless Treasury bonds. Sales were flat last year, and profits down. Sigler expects 1990 to be worse.

Many fund managers want to see outside directors as chairmen of the board because they do not trust CEOs.

That may be why the Wisconsin Investment Board for the past two years has submitted a shareholder proposal that advised Sigler and the board to put the company's poison pill to a shareholder vote. The proposal last year drew 47% of the votes, a notably good showing considering that management opposed it.

Several days before Wisconsin resubmitted its proposal for the 1990 proxy season, Sigler announced the sale of $300 million in convertible preferred stock to Warren Buffett's Berkshire Hathaway, a move widely interpreted as an attempt to place a large block of shares in friendly hands to prevent a hostile takeover. The second time around, Wisconsin's proposal triumphed, again in the face of management opposition. Sigler says that he and the board will most likely put the pill to a vote. Says Pat Lipton, the Wisconsin Investment Board head: "The vote has brought a tremendous focus on that company. It puts the ball very clearly in management's court."

continued

More than a few institutional investors echo Lipton's belief and doubt that Buffett offers Sigler insurance against being ousted. Says one: "Buffett doesn't stop a tender. If someone comes in with a $40 bid, he's going to make management respond to the bid. He's an economic animal."

Institutional activism is still evolving, likely to grow and adapt in coming years. A few changes seem certain:

■ **Institutions will become more sophisticated.** Pension funds typically haven't the foggiest idea about the fundamentals of most of the businesses they own. That is because so many of them "index"—they simply buy stocks in proportion to their relative weights in a major market index like, say, the Standard & Poor's 500. Besides, giant pension funds must diversify so widely that they can't possibly study the basics of all their stocks. That calls into question their ability to behave like proper owners—knowledgeable and patient types who can have a stabilizing effect on corporations trying to sail true courses in rough weather.

It is beginning to dawn on them that they had better bone up on some of their larger holdings if they want respectful treatment by management. That is why many institutions are intensifying their monitoring of companies. Calpers and others are fine-tuning their already considerable computer databases and relying more on outside stock analysts to measure how their companies are doing. They are looking more closely at companies' returns on equity and capital allocation decisions.

IN THEIR GRIP: COMPANIES WHOSE SHARES ARE HEAVILY OWNED BY INSTITUTIONS

	Percent of equity institutionally held
CNA Financial	96%
Capital Cities/ABC	89%
Cigna	85%
Lotus Development	82%
Southwest Airlines	81%
Bausch & Lomb	80%
Whirlpool	80%
Circuit City Stores	79%
Cross & Trecker	78%
Dayton Hudson	78%
Cray Research	77%
Intel	77%
Reynolds Metals	77%
Geico	77%
Polaroid	77%
James River	76%
Deere	76%
Chase Manhattan	75%
CBS	75%
Aluminum Co. of America	74%

SOURCE: VICKERS STOCK RESEARCH

■ **New proxy rules may give institutions more clout.** Encouraged by institutional investors, the SEC has announced a major review of the proxy process. The pension funds contend that until proxy rules are substantially revised, the process will remain an uncertain lever of control to be used against unresponsive managers. They want to see confidential voting with independent tabulation in proxy contests to minimize the possibility of management's pressuring shareholders to vote for its plank. This would probably involve some independent intermediary conducting the vote. Today, as every shareholder who has ever signed a proxy card is aware, management knows how each shareholder votes. It does the counting as well.

More important, institutions are lobbying for an end to the longstanding pro-management rule that they get SEC clearance before talking with more than ten other shareholders, no matter how informal the communication might be. In principle they object to this limitation on their free speech. More practically, they want easier communication among shareholders so they can more effectively pressure management.

■ **Back-channel chats will be common.** While proxy fights attract the press's attention, institutions also hold private talks with management to resolve conflicts before they erupt into nasty disputes. Expect more of this. It makes sense because for all their disagreements, management and shareholders have much more in common than they have differences.

Money manager LeBaron has dared to vote against management.

■ **Institutions will press for more independent directors.** Most pension funds see the board of directors as the missing link in the chain of managerial accountability. Too often, the directors are in management's hip pocket. That is why institutions will keep pressing for truly independent boards. Many fund managers want to see outside directors installed as chairmen of the board because they do not trust CEOs to serve the shareholders first and themselves second.

If you're a shareholder, the institutions' new role may be something to cheer about. If you're an executive, you may not be sure what to think of it (see CEO Poll). Should pension fund managers be in a position to give some orders to professional executives? Well, why not? If you represent the owners, isn't that your right, even at times your obligation? Institutional activism comes down to one of the basic business issues of our age: the role of shareholders in vast, publicly owned companies. In addition to the movement's many other effects, it should bring that important issue to a head. F

TWO CHEERS FOR PUSHY INVESTORS

America's top executives say newly active institutional shareholders make managing tougher. But even the most vocal are welcome—if they stay for the long haul. ■ *by Terence P. Paré*

LIKE SO MANY Greta Garbos, long-silent institutional investors are making a splash when they finally speak (see preceding two articles). But what they're saying sharply divides the CEOs of America's largest corporations. While many bosses claim to be willing and even eager to hear out their biggest shareholders, other chiefs, Garbo-like in their own way, want to be left alone.

CEOs are more likely than not to say that substantial ownership by institutions makes a company *less* stable. While most report that their own companies' institutional shareholders have not grown more active, few dispute that large investors have far more to say now than in the past about running the corporations they own.

Why would any CEO welcome more muscle flexing by these 900-pound gorillas? Those who deem the phenomenon a good thing say most often that active institutional investors give managers a chance to communicate their strategies to a few interested, influential holders, rather than trying to send a message to thousands of individuals. Many other chiefs abhor the volubility of institutions. The commonest complaint: Fund managers push too hard for short-term results, making long-range planning difficult if not impossible. Yet most CEOs admit that they evaluate their own pension funds on a short-term basis.

These are among the results of the FORTUNE 500 CEO Poll of 200 chief executives of FORTUNE 500 and Service 500 companies. It was conducted by Clark Martire & Bartolomeo, a public opinion research firm, between June 5 and June 16.

Having major institutional owners makes the job of keeping the corporate ship on an even keel harder, say bosses. Exactly 50% agree that significant ownership by institutions decreases a company's stability. When an institution decides to sell, the action may hammer the stock price simply because the number of shares put on the block is so large. Often other big shareholders compound the effect. Says Richard H. Deihl of H.F. Ahmanson, the large, healthy California thrift: "If one institution bolts, several others may follow because as professional investors, they have access to the same high-quality information."

Activism is clearly on the rise. Led by public pension funds, cited by 57% of CEOs as the most energetic of institutional investors, more big shareholders are pounding on the gates like the shaggiest of barbarians and demanding to be heard. An even 40% of CEOs say institutions that own stock in their companies have become more active lately, and that proportion seems sure to increase. CEOs see a bellwether in actions like that of the California Public Employees Retirement System pension fund, which holds about seven million shares of General Motors (1% of the total). Calpers made headlines when it demanded a voice in the selection of GM's next chairman. Eugene Nugent of Pentair, a St. Paul forest products company, says, "We're in the early stages of the institutional investors beginning to perceive themselves as a super–board of directors."

The institutions are pushing the Securities and Exchange Commission for changes that would allow them even more power. The SEC is considering a proposal to loosen the restrictions of Rule 14a-2(b)(1), which permits only a small number of shareholders to solicit proxies without making their intentions public. The change would make it easier for large holders of a company's stock to plan strategies for proxy fights. That worries Rand V. Araskog of ITT: "If activism gets to the point where investors form networks, it could be very bad. The Michael Milken thing showed what networking could do."

But many CEOs treasure the institutions'

Q A **Do you think that, on the whole, significant institutional ownership increases or decreases a company's stability?**

Decreases	50%
Increases	24%
No effect	18%
Does not apply	12%
Not sure	5%

Totals over 100% because of multiple responses.

Q A **Which institutions do you consider the most activist shareholders?**

State and public pension funds	57%
Mutual funds	14%
Teachers' funds	12%
Insurance companies	8%
Church and environmental groups	4%
Other	19%
Don't know	19%

Totals over 100% because of multiple responses.

"If activism gets to the point where investors form networks, it could be very bad."

RAND V. ARASKOG
Chairman and CEO
ITT

REPORTER ASSOCIATE: *Sandra L. Kirsch*

two cents' worth. Fully 43% of chiefs say the growing activism is good on the whole. The benefit most often cited: improved communication. Keeping up the conversation with shareholders makes long-term planning easier, says George V. Grune of the Reader's Digest Association: "If investors talk regularly with senior executives, they are more likely to understand the company's long-term strategy."

Other executives noted that, for reasons of self-interest, managers had *better* communicate with major institutional holders. Says Richard Lehmann of Valley National, a Phoenix banking company: "Institutional investors can have a lot of money invested in a company. If there is no communication, eventually they will move their money elsewhere."

Nearly as important a benefit of active institutional owners, say 17% of CEOs, is that sharp-eyed and quick-tongued money managers help keep management accountable to shareholders. R. A. Bernstein of Western Publishing volunteers one case in point: "Take Roger Smith getting a doubling of his pension. He should have been tarred and feathered instead of rewarded." No, there is no shortage of reasons for big investors to make themselves heard, according to Golden West Financial's Marion O. Sandler: "Corporate democracy, with its perks, is a fiction, and corporations are generally not run for the benefit of the stockholders. Investors have a right to expect performance, not the perpetuation of corporate privilege."

Q A **Have the institutions that own stock in your company taken a more active role in the past few years?**

Yes	40%
No	51%
Not sure/doesn't apply	9%

Q A **Does your company evaluate the performance of its pension fund managers on a quarterly basis, more frequently, or less frequently?**

Quarterly	59%
More frequently	4%
Less frequently	32%
Not sure/doesn't apply	5%

"If investors talk with executives, they are more likely to understand long-term strategy."
GEORGE V. GRUNE
Chairman and CEO
Reader's Digest Association

The 34% of bosses who are weary of interference by institutional shareholders cite the short-term focus of money managers as the No. 1 reason. W. R. Wilson of Lukens, the steelmaker in Coatesville, Pennsylvania, says, "Institutions don't have much loyalty to companies. They'll sell out to any guy who will give them a profit so that they can beat their peers. That's their job."

Many bosses see the interests of top executives and of institutional investors as fundamentally at odds. Corporate managers must look far ahead, but the primary responsibility of pension fund managers is a fiduciary one to their pensioners. Because of this inherent conflict, says Deihl, "I don't approve of ownership getting involved in management."

Particularly irksome for 9% of CEOs is that institutional investors often seem to pursue private, nonbusiness agendas. Says John Burns of Vista Chemical: "Institutional investors from political groups like public employee pension funds are imposing political considerations on management. For example, it can only be deduced that business performance will be hurt by pension managers' biases about South Africa." John P. Hayes of National Gypsum concurs: "I don't think the role of the institutional investor is being a social activist."

Normally a decisive group, the CEOs include many who will not point thumbs up or down on the issue of institutional activism. Says Dale Johnson of SPX, an automotive parts and equipment company in Muskegon, Michigan: "I think the jury is still out. There is potential to go either way, and it's too early to tell." Fully 10% concurred, saying they were not sure whether the new forthrightness of institutions was good or bad. For William Goessel of Harnischfeger Industries, along with 11% of bosses, the jury is in but hung: The new activism is good *and* bad. As Goessel says, "Companies can't just sit and retain the status quo. There has to be some activity and churning. But in some cases investment policies are just lousy because they are too short term."

There's that complaint again. And why would pension funds, among others, take a short-term view? CEOs readily admit that they monitor the performance of their own companies' pension funds closely, with 59% saying they check their money managers' performance every quarter. Cynics are quick to point to the apparent hypocrisy. But looking doesn't necessarily imply touching, bosses say. The chiefs pay attention but generally leave fund managers alone—just as funds used to leave chief executives alone. Question is, how long before that rule, too, is broken? F

"I don't approve of ownership getting involved in management."
RICHARD H. DEIHL
Chairman and CEO
H.F. Ahmanson & Co.

Q A **On the whole, is the growing activism of institutional investors good or bad? Why do you say that?**

Good	43%
Provides better communication between shareholders and management	20%
Holds management accountable	17%
Helps management take a longer view	5%
Other	6%
Bad	34%
Focuses too much on short term	19%
Is too concerned with social policy	9%
Disregards best interests of company	7%
Other	7%
Both	11%
Neither	2%
Not sure	10%

Totals over 100% because of multiple responses.

MARKETS OF THE WORLD UNITE

THE WORLD'S capitalist economies are marching into the 1990s on an eighth consecutive year of growth, picking up converts from Prague to Managua on the way. Charts and tables on the following pages tell the tale of the past and forecast the future—from interest rates and unemployment to the flow of goods and capital. (Except as noted, the data and forecasts are from the DRI/McGraw-Hill economic consulting firm.)

The pace of the world expansion slowed to about 3% in 1989, down from 4% in 1988, and most economists expect it to moderate further this year. But the newcomers will help keep the party going. Economic activity in the coming decade promises to be ever more decentralized—and ever more integrated by flows of trade, capital, people, and ideas.

Will the world be able to finance all of its new ambitions? Claims on capital appear to be growing faster than savings. But, says Robert Hormats, vice chairman of Goldman Sachs International: "Low savings and high demand can be an incentive to use capital more efficiently."

Companies from Kansas to Kyoto are lining up to take advantage of the big new market in the big new Europe, which is enjoying a rush of economic activity unthinkable a few years ago. Real fixed investment in West Germany should go up by almost 9% in 1990, four times as fast as in the U.S. Reunification of the two Germanies will put pressure on prices, but the fiscally conservative West Germans should handle that with grace. Spain and Portugal, the newest European Community members, should also gather momentum as they attract more investment.

Asia's Little Dragons, the darlings of the 1980s—South Korea, Taiwan, Hong Kong, and Singapore—have growing pains. With wealth come higher labor costs and inflation. South Korea and Taiwan are squirming as they adjust to slower expansion—yearly increases of merely 6% or 7%, vs. the 11% to 12% they have been used to. Their neighbors to the south—Malaysia, Indonesia, and Thailand—also remain in high gear, fueled by exports and a rising tide of foreign investment, mostly Japanese.

As Japan's consumers learn to spend their way to a standard of living comparable to their nation's wealth, business investment is reaching eye-popping rates—for example, a 35.3% increase in spending for steel this year, 33% for services. Japan's trade surplus shrank 28% last year, but the export juggernaut will continue.

Barring unexpected disasters—currency upheavals, oil price spikes—the world financial system looks reassuringly resilient after shrugging off Japan's stock market plunge. If countries can temper their squabbling over trade and tend to their own economies, everyone will have room to grow in the global community of the Nineties. – **Shelley Neumeier**

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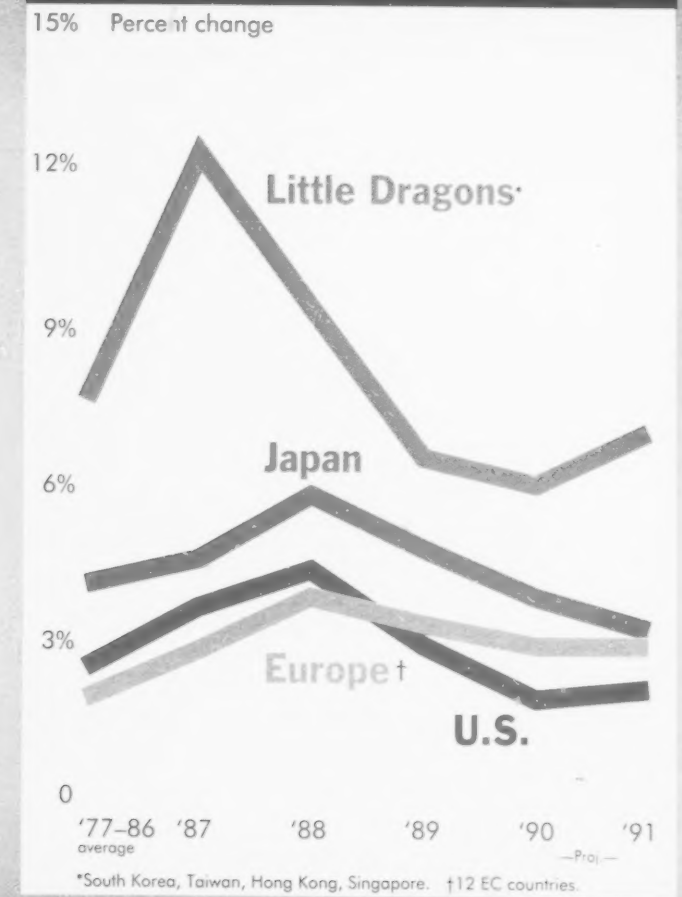
ILLUSTRATIONS BY LINDA ECKSTEIN

HOW THEY'RE DOING

REAL GNP GROWTH



*South Korea, Taiwan, Hong Kong, Singapore. †12 EC countries.

ALL FIGURES PROVIDED BY DRI/MCGRAW HILL UNLESS OTHERWISE NOTED

INTEREST RATES

After moving closer to U.S. levels, interest rates in Japan and West Germany will ease. Increasing demands on the global capital pool may keep rates generally up for a while.

BUDGETS

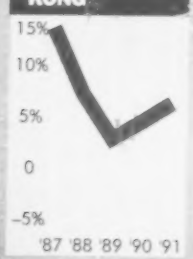
INFLATION

Slower growth will cool inflation in Japan, but reunification will lift it in Germany. The U.S. rate could rise more than expected.

UNEMPLOYMENT

Even with new workers from the East, Germany's rate is dropping. Without immigration, Japan's labor market will remain tight.

HONG KONG



PHILIPPINES

THAILAND

SINGAPORE

INDONESIA

INDIA

MEXICO

BRAZIL

THE TOP 25 COUNTRIES

RANKED BY BUYING POWER

	PER CAPITA GDP adjusted for purchasing power U.S. dollars, 1987	GDP in billions of U.S dollars 1989	ANNUAL GROWTH real GDP 1984-89	POPULATION in millions 1989
United States	$17,615	$5,234.0	3.45%	249.0
Canada	$16,375	$547.8	3.86%	26.2
Norway	$15,940	$90.7	2.01%	4.2
Switzerland	$15,403	$176.6	2.71%	6.7
Luxembourg	$15,247	$6.6	3.55%	0.4
Denmark	$15,119	$104.3	0.76%	5.1
West Germany	$14,730	$1,203.0	2.91%	61.6
France	$13,961	$957.4	3.06%	56.1
Hong Kong	$13,906	$61.5	8.78%	5.7
Kuwait	$13,843	$22.4	5.43%	2.1
Sweden	$13,780	$185.0	1.80%	8.5
Iceland	$13,324	$5.2	2.93%	0.3
Belgium	$13,140	$151.1	3.34%	9.9
Japan	$13,135	$2,834.0	4.43%	123.0
Finland	$12,795	$112.2	3.57%	5.0
Singapore	$12,790	$28.4	7.86%	2.7
Netherlands	$12,661	$221.5	2.13%	14.9
Austria	$12,386	$125.9	2.77%	7.6
Britain	$12,270	$833.2	3.88%	57.1
United Arab Emirates	$12,191	$23.8[2]	4.08%[3]	1.7
Australia	$11,782	$280.8	3.44%	16.8
Bahrain	$11,142	$0.5[2]	1.75%[3]	0.5
Italy	$10,682	$866.1	3.22%	57.5
New Zealand	$10,541	$40.3	0.19%	3.4
Israel	$9,182	$40.8[4]	3.55%[4]	4.5

[1] Provisional. [2] 1988. [3] 1983-88. [4] Estimate.

SOURCES: PENN WORLD TABLE, IMF, DRI

THE WEALTH OF NATIONS

Money is worth only what it can buy, and it can buy a lot more in Tulsa than in Tokyo. Countries here are ranked by per capita gross domestic product adjusted to reflect what their consumers can afford. By this yardstick such countries as Japan and Britain—powerhouses in terms of total output—tumble down the list, while smaller ones with relatively high living standards like Hong Kong and Norway move up.

continued

SPREADING INVESTMENTS

Though much of the world's investment money sloshes around among the major countries of the Organization for Economic Cooperation and Development, more players jump into the pool almost daily. Everybody has a deal to tout. Thailand, Malaysia, and Indonesia offer cheap, skilled labor to Japanese, Taiwanese, and even South Koreans. India gives foreigners a warmer welcome into its huge but still restrictive economy. Mexico promises a new market-oriented environment. Eastern Europe also holds forth the lure of getting in on the ground floor, with the bonus of participating in the triumph of an ideology.

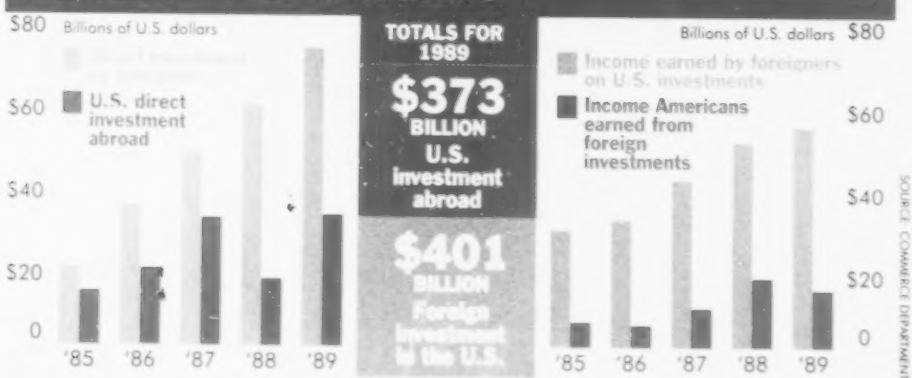
The biggest recipient is not celebrating but agonizing over the "Selling of America." By the end of last year, cumulative foreign direct investment in the U.S. totaled $401 billion, outpacing U.S. investment abroad by over $27 billion. The hand wringers may find solace in the first quarter's figures: The inflow of foreign capital dropped markedly. At the same time, U.S. companies are increasing their investments in Europe and East Asia. U.S. foreign direct investment almost doubled in 1989. But domestic capital expenditures remain sluggish at about 10% of GNP. Japan, by contrast, is spending heavily both at home and abroad.

DIRECT INVESTMENT FLOWS IN THE OECD

Top capital exporters	Cumulative 1961-88	1988	Top capital importers	Cumulative 1961-88	1988
United States	$302.4 billion	$20.4 billion	United States	$276.2 billion	$42.2 billion
Britain	$183.0 billion	$26.6 billion	Britain	$98.8 billion	$12.7 billion
Japan	$113.2 billion	$34.2 billion	France	$43.8 billion	$6.7 billion
West Germany	$75.0 billion	$10.4 billion	Australia	$37.0 billion	$4.8 billion
France	$57.1 billion	$12.8 billion	Netherlands	$30.9 billion	$3.2 billion

SOURCE OECD

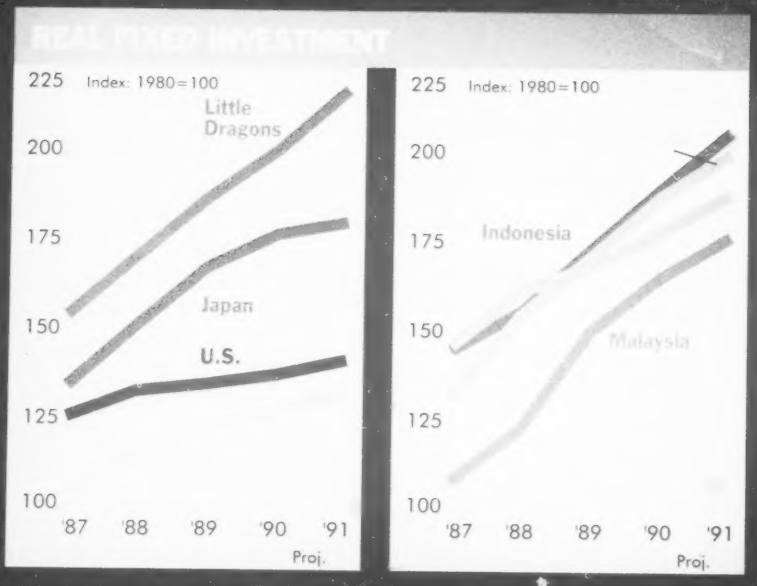
U.S. DIRECT INVESTMENT FLOWS



SOURCE COMMERCE DEPARTMENT

PLOWING THE PROFIT BACK IN

Countries that save more—like Japan, the nations of Europe, and Asia's Little Dragons—have more to invest. Personal savings in the U.S. have regained much of the ground lost in the mid-1980s, but government dissaving, meaning the deficit, reduces the national rate.

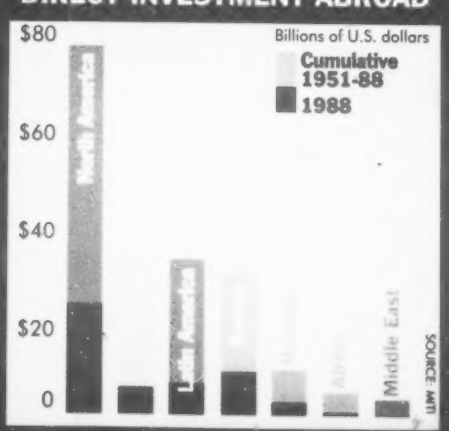


	FIXED INVESTMENT AS A PERCENT OF GDP Five-year average	SAVINGS AS A PERCENT OF GDP 1989, gross
Japan	35.6%	34.4%
Little Dragons	29.2%	47.2%
Malaysia	28.4%	35.0%
Thailand	23.5%	30.1%
Europe	21.9%	22.3%
Indonesia	21.2%	21.5%
India	20.0%	32.2%
United States	17.0%	13.9%

WHERE THE JAPANESE ARE PUTTING THEIR MONEY

A high savings rate and sustained growth have turned Japan into one of the world's leading investors. A large share of the money goes to the U.S., attracted by high returns, a stable government, and an open economy. The Japanese are stepping up investment in neighboring Asian nations as well, buying real estate, acquiring companies, and building factories. Europe is next.

DIRECT INVESTMENT ABROAD



DEVELOPED MARKETS	MARKET CAPITALIZATION June 1990 in billions	ANNUAL GROWTH 1984-89
Japan	$3,428.0	46.80%
United States	$3,067.1	13.48%
Britain	$838.1	27.77%
West Germany	$368.7	36.03%
France	$364.8	54.75%
Hong Kong	$86.9	26.84%
EMERGING MARKETS		
Taiwan	$155.4	88.77%
South Korea	$122.7	86.64%
Malaysia	$46.5	15.48%
Mexico	$41.2	59.32%
Brazil	$26.8	8.88%

*Year-end 1989.

SOURCES: MORGAN STANLEY CAPITAL INTERNATIONAL PERSPECTIVE AND INTERNATIONAL FINANCE CORP.

ESCAPING THE PAST

LATIN AMERICA

After a decade of hyperinflation, debt, and poverty, Latin America has started to rumble with change. One incentive: revolutions on the other side of the globe. So far, reforms in Mexico and Chile have yielded the most results. Mexico's President Carlos Salinas de Gortari, says Morgan Stanley senior economist Robert Gay, "was competing in a free-for-all for capital and saw that Mexico was going to be ignored." A big gush of foreign investment is next on Salinas's wish list, and if it comes, Mexico indeed has a shot at becoming what Douglas Campbell, an investment banker who specializes in Mexican securities, calls "a Korea on the U.S. doorstep." Chile is reaping the rewards of being first to adopt tough-minded free-market policies and to stick with them. New leaders in Brazil and Argentina have also slapped their economies with ambitious plans, free market in flavor, but there the jury will be out for a long time.

GDP PER CAPITA
1990 as a % of 1980

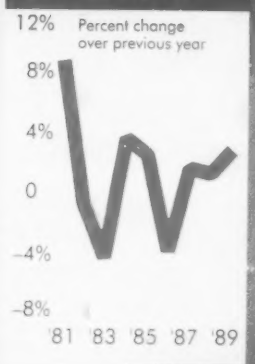
Argentina	36.4
Brazil	98.4
Peru	105.3
Venezuela	55.6

TOTAL DEBT
1990 as a % of 1980

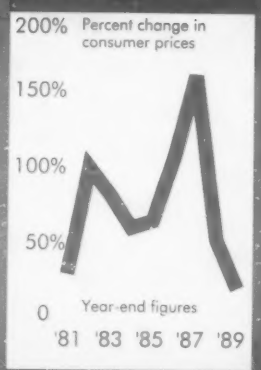
Argentina	206.7
Brazil	182.4
Peru	218.8
Venezuela	135.8

MEXICO

GDP GROWTH



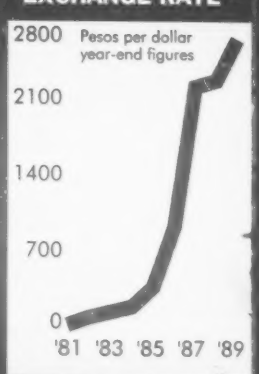
INFLATION



FOREIGN DIRECT INVESTMENT

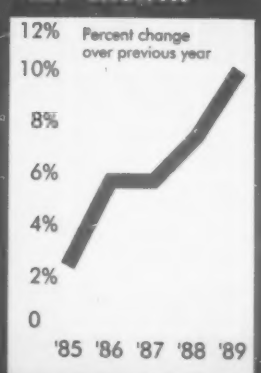
FOREIGN DEBT

EXCHANGE RATE

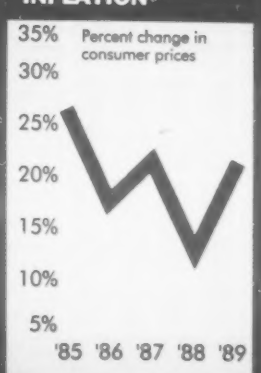


CHILE

GDP GROWTH



INFLATION



FOREIGN DEBT

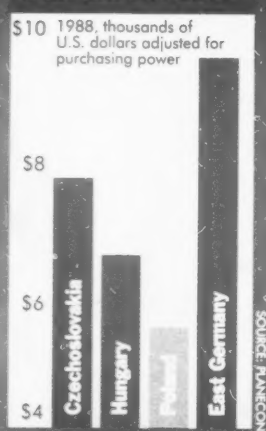
THE EX-COMMUNIST BLOC

The formerly Communist countries of Eastern Europe are starting to feel the sting of their new skin as they shed their centrally planned pasts and metamorphose into market economies. "There's going to be pain," says Klaus Friedrich of the Institute of International Finance. "They have to disintegrate the system first to reintegrate it along market lines." One big unanswered question is how much Western capital their economies can absorb, and how quickly.

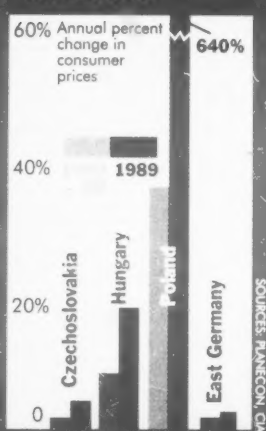
East Germany, with the warm embrace of its deep-pocketed sibling in the West, will have the cushiest transition but can still be expected to get hit hard with unemployment and inflation. Czechoslovakia, saddled with archaic heavy industry, nonetheless has the next-best prospects. Other countries will look on anxiously as the mavericks of reform, Poland and Hungary, take their hits—slowing output, high inflation, growing unemployment, and social unrest. With tenacity and guts, though, reform-minded governments stand to fare best in the long term.

GDP GROWTH

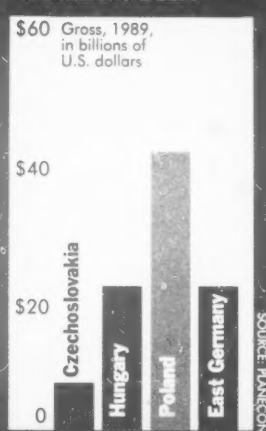
PER CAPITA GDP



INFLATION



FOREIGN DEBT



ECONOMIES BY SECTOR

STANDARD OF LIVING

	AUTOMOBILES per 1,000	TELEPHONES per 1,000	TVs per 1,000
Czechoslovakia	173	226	122
Hungary	145	134	275
Poland	105	118	85
East Germany	209	211	119
West Germany	446	641	377

SOURCES: IIASA, OECD, CIA

SHIFTING TRADE SHARES

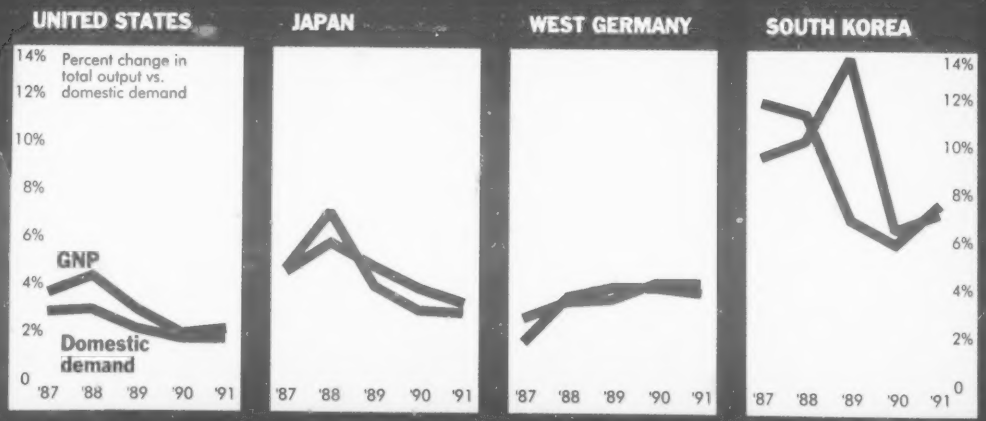
The trade balances that got acutely imbalanced in the 1980s have a chance of moving back into line this decade. Japan's current account surplus fell by 28% in 1989 as exports dropped, imports surged, and manufacturers shifted more production to cheaper locations—including the U.S. Over the past four years, American merchandise exports to Japan have risen 50% faster than those to the rest of the world. With domestic demand strong, the Japanese government found it easy to grease the wheels a bit in hopes of mollifying cantankerous American politicians. U.S.-manufactured exports to the rest of the world continue to grow, and booming global trade in services should tilt the playing field further toward America over the long run.

Though the Little Dragons continue to increase their share of the world export market, they are also buying more.

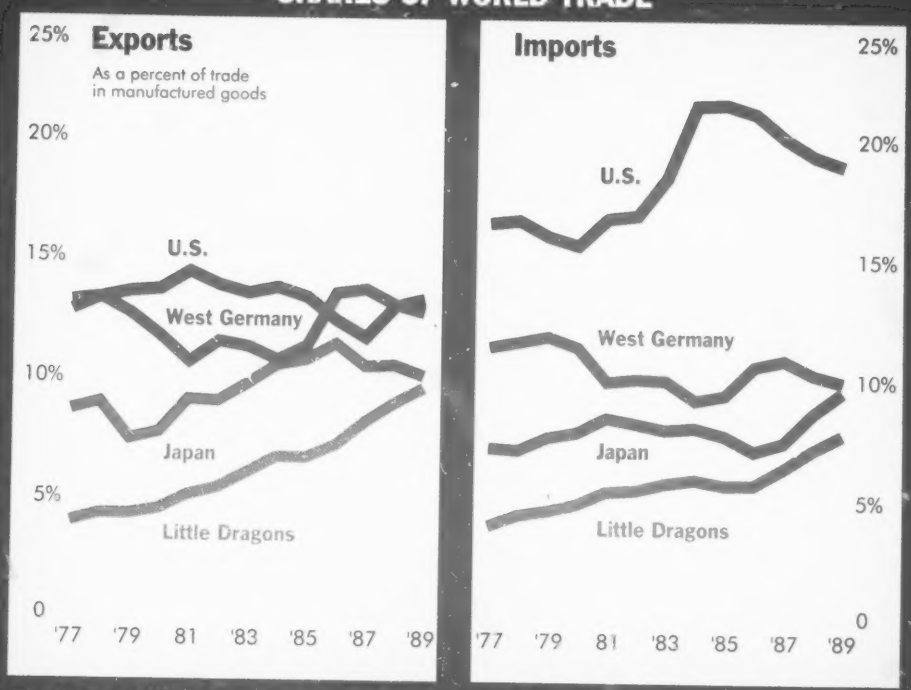
So why isn't everybody smiling? The U.S.'s high deficit with Japan remains a lightning rod for Americans worried about national decline. Angry words flew across the Atlantic too as Europeans and Americans clashed during talks over farm subsidies and textiles. But trade within the three major blocs—Europe, Asia, and North America—is growing along with intercontinental trade and should get another shot in the arm as Europe unites. North America's own little version of 1992, the Free Trade Agreement between Canada and the U.S., is bolstering the already voluminous trade between the neighbors. Mexico would like to join too.

TOTAL OUTPUT VS. DEMAND

Strong domestic demand in Asia and Europe means export opportunities for the U.S. and other countries where the growth of output is outpacing that of consumption.



SHARES OF WORLD TRADE

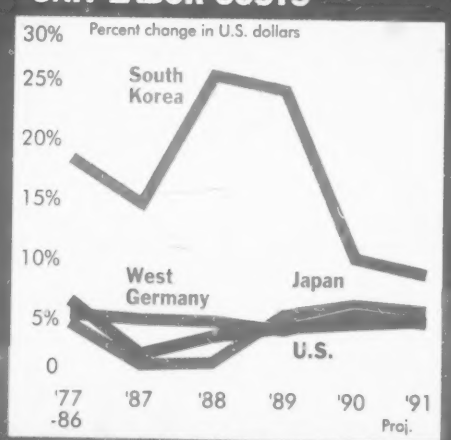


The U.S. and West Germany are playing nip and tuck for leadership in world exports, and the Little Dragons are closing fast on Japan. America's share of imports is shrinking as consumers in Japan and the Little Dragons begin spending their wealth.

THE DOLLAR

Compared with the gyrations it went through during the Eighties, the dollar is a model of stability these days.

UNIT LABOR COSTS



Growing wage demands will continue to lift costs in South Korea. Germany, Japan, and the U.S. face smaller rises.

CURRENT ACCOUNTS

Trade balances of the major industrial nations are inching toward equilibrium, though the U.S. still has miles to go.

SNAPSHOT OF PRICES AND PAY

		Frankfurt	Hong Kong	London	New York	Paris	Mexico City	Manila	Singapore	Tokyo	Sydney
COSTS	**6-pack Coca-Cola**	$2.89	$2.08	$2.07	$2.55	$3.61	$2.14	$2.85	$2.29	$5.01	$2.47
	Chicken, per lb.	$2.57	$2.06	$2.49	$1.49	$2.75	$1.68	$1.29	$2.17	$3.99	$1.90
	Hairdresser Woman's	$24.52	$18.89	$30.89	$29.94	$24.65	$13.66	$10.65	$16.41	$47.97	$22.83
	Man's shirt Arrow	$44.78	$25.66	$38.66	$34.64	$51.41	$21.88	$32.56	$29.79	$63.95	$34.41
	Tylenol 100 tablets	$15.94	$5.69	$8.52	$5.93	$11.71	$4.59	$13.56	$6.48	$22.16	$7.41
	VCR VHS, internationally compatible	$878.12	$588.69	$620.13	$399.39	$954.12	$740.14	$497.69	$476.17	$951.38	$736.22
	Tune-up Labor only	$90.70	$67.10	$107.06	$54.99	$124.38	$29.16	$14.74	$45.60	$201.96	$62.99
	Paperback Recent best-seller	$10.20	$10.41	$6.85	$5.74	$9.87	$6.17	$5.17	$8.08	$8.58	$8.23
	1 golf ball	$2.55	$2.23	$2.62	$1.56	$3.39	$2.02	$1.99	$2.06	$6.01	$2.41
	Johnnie Walker Red 750 cc	$15.17	$13.74	$16.33	$15.61	$13.07	$12.20	$10.09	$24.04	$21.42	$18.11
	Premium gasoline 1 gallon	$2.59	$2.56	$2.50	$1.30	$3.57	$0.85	$1.10	$2.07	$4.18	$1.92
EARNINGS	**Chief executive** Before-tax annual compensation	$235,000	$153,000	$172,000	$305,000	$188,000	$220,000	$177,000	$170,000	$187,000	$128,000
	Personnel director Before-tax annual compensation	$114,000	$74,000	$85,000	$91,000	$101,000	$90,000	$41,000	$81,000	$89,000	$56,000

SOURCE: ASSOCIATES FOR INTERNATIONAL RESEARCH

SOURCE: WYATT CO.

I'LL TAKE MANHATTAN

CEOs in New York can't complain. They not only earn far more than their counterparts in other cities, but they also pay far less when they want to kick back with a book, hit the links, or slip a flick into an imported VCR. Bargain hunters will want to steer clear of Tokyo and head to Singapore, Manila, or Mexico City, especially when they're buying services.

FORTUNE

FORTUNE'S NEW GLOBAL 500

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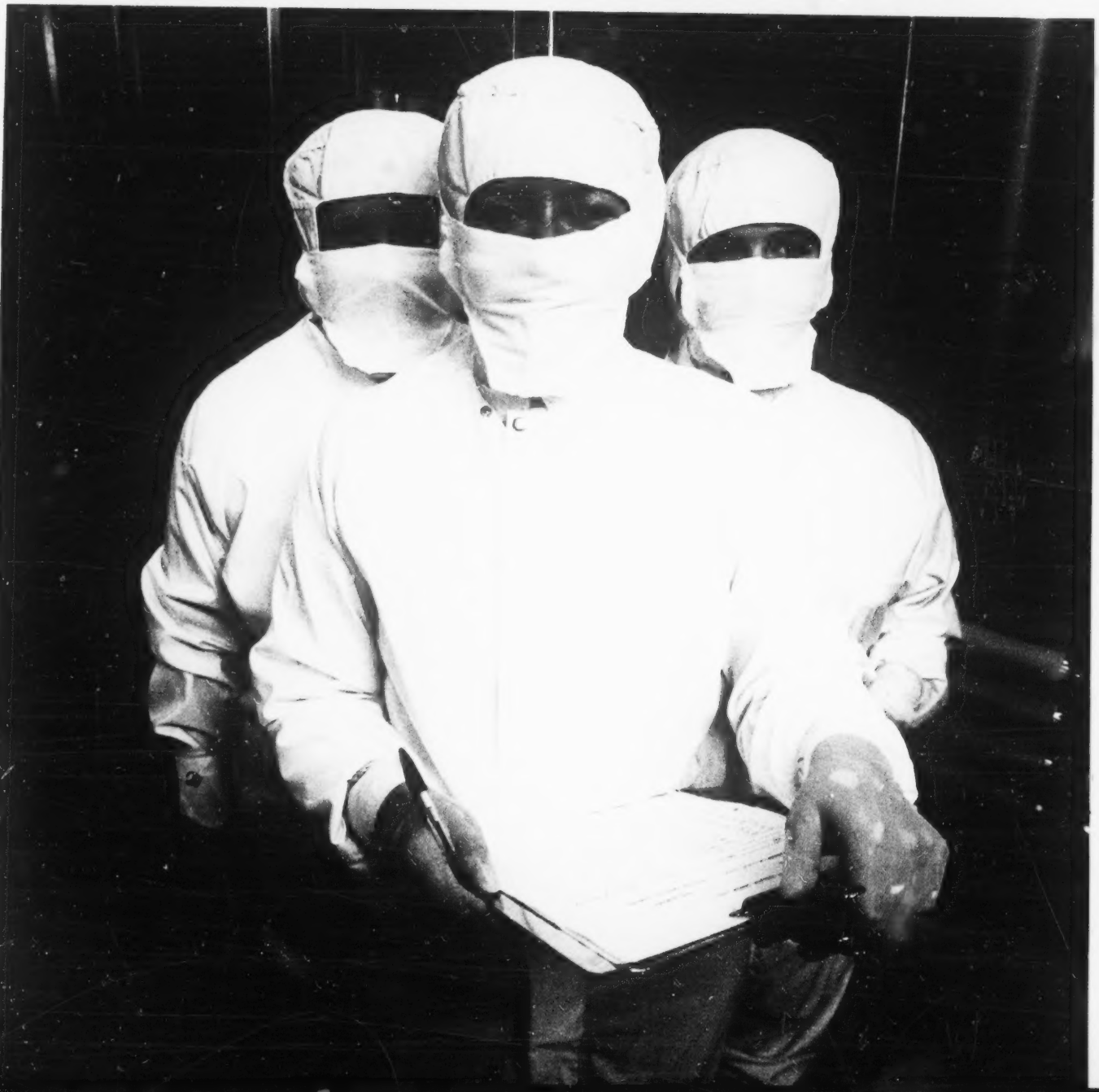
CONSTRUCTION BY NICHOLAS FASCIANO. PHOTOGRAPHY BY ROBERTO BROSAN

THE GLOBAL **500**

THE WORLD'S BIGGEST INDUSTRIAL CORPORATIONS

INTRODUCING A NEW FORTUNE LIST



COUNTRIES WITH THE BIGGEST COMPANIES

COUNTRY	COMPANIES ON THE LIST	LARGEST COMPANY
UNITED STATES	167	GENERAL MOTORS
JAPAN	111	TOYOTA MOTOR
BRITAIN	43	BRITISH PETROLEUM
WEST GERMANY	32	DAIMLER-BENZ
FRANCE	29	RENAULT
SWEDEN	15	VOLVO
CANADA	13	CANADIAN PACIFIC
SOUTH KOREA	11	SAMSUNG
AUSTRALIA	10	ELDERS IXL
SWITZERLAND	10	NESTLE

NOW THAT the global village is truly upon us, it looks more like a global industrial park. We live in an expansive new world of eco-nomic interconnections where business roars through borders and time zones. To keep up with it, FORTUNE on these pages introduces the Global 500—the largest industrial corporations in the world ranked by sales.

The new list is a combination of the 500 largest industrial companies in the U.S., first published in 1955, and the International 500, which was begun in 1976 and included only companies outside the U.S. In recent years, FORTUNE also produced rankings of the world's top 50 and 100 companies, but this new list has much more data. It cites not only sales and profits, but assets, stockholders' equity, and numbers of employees as well, and also ranks companies by industry groups and by country. The top 50 companies on the new list generated $1.85 trillion in sales, 5% more than in 1988, adjusted for inflation.

The Global 500 offers more than a picture of how the world's biggest companies fared at the end of the decade. It is a snapshot of the final year of the postwar economic order, when countries stuck almost exclusively to their own sides of the Berlin Wall and capitalists had capitalism almost exclusively to themselves.

Well over half the 500's revenues came from petroleum production and refining, automaking, electronics manufacturing, and food processing. Oil companies generated higher revenues and earnings than any other group. Exxon is the biggest oil company, ranking No. 3 on the list behind General Motors and Ford Motor. Royal Dutch/Shell ranks fourth. Petróleos de Venezuela (No. 76), Petrobrás (No. 58) of Brazil, and Pemex (No. 65) of Mexico are all in the top 100.

The U.S. leads all countries, with 167 companies on the list. That's more than Japan, West Germany, and Canada combined. Besides GM, Ford, and Exxon, 32 other U.S. companies were in the top 100. Americans are No. 1 in 14 of the 25 industries on the Global 500, including aerospace (Boeing, No. 45), computers (IBM, No. 5), and electronics (General Electric, No. 7). The main competition in aerospace comes from France, which has four companies, compared with the U.S.'s 11. In computers, the U.S. has ten companies to Japan's three.

Impressive as those numbers are, U.S. dominance is slowly giving way. In 1980, 23 U.S. companies made the top 50, compared with only five Japanese. Now there are 17 American and ten Japanese. Two of the largest corporations, Samsung (No. 20) and Daewoo (No. 47), are South Korean. The trend is particularly noticeable in electronics. Of the 46 companies in the category, the U.S. has 16 and Japan 15. But after GE, five of the top ten are Japanese and the rest are from South Korea, West Germany, the Netherlands, and France.

A CUSTOMER interested in doing business with the world's biggest companies might order clothes from a U.S. firm—the largest apparel maker is Levi Strauss (No. 360)—but the materials could well come from Japan, which has the three top textile makers. Planning a dinner party? Order food and beverages from the U.S. (Philip Morris, No. 14, and PepsiCo, No. 63, lead their categories), but leave the music to Japan (Yamaha, No. 348, is the world's biggest producer of pianos). Thinking of settling down? Build a house with British building materials (Hanson, No. 91) and buy tires for your GM car from a Japanese company (Bridgestone, No. 84).

The most profitable companies were American and British. U.S. industrial firms accounted for 37% of sales of all companies on the list, but 40% of profits. Britain produced 12% of profits—the second best—on just 7% of sales. Surprisingly, the Japanese were relatively weak earners. While they were second to the U.S. in sales, with 20% of the total, they were behind the British in profitability.

Though the empire is long gone, British companies maintained a formidable global presence through exporting. BAT Industries (No. 36) began to sell off its retailing divisions to focus mostly on tobacco. With brands like Kool, Kent, and Lucky Strike, BAT increased cigarette exports by 16%. British Aerospace became Britain's largest exporter of manufactured goods.

Globalization sped ahead, with U.S. and European multinationals buying their way into new markets through mergers, acquisitions, and joint ventures. SmithKline Beckman of the U.S. and Beecham Group of Britain merged to become SmithKline Bee-

Strengthened by a global merger, sterile-area operators help make an antibacterial cream at the new British-American SmithKline Beecham.

PHOTOGRAPH BY JUSTIN LEIGHTON—NETWORK

cham (No. 157), the third-largest pharmaceutical company. CMB Packaging (No. 384) of France, which makes cans and bottles, was created through a merger of France's Carnaud and an arm of Britain's MB group. Nippon Mining (No. 210), a metals and petroleum company, strengthened its drive into electronics by acquiring Gould Inc. of the U.S. Asea Brown Boveri, the Swiss-Swedish maker of heavy electrical equipment, greatly increased its U.S. presence with the acquisition of Combustion Engineering and the electric transmission and distribution divisions of Westinghouse. Ford bought Jaguar, Britain's upscale but troubled carmaker.

Two Japanese companies reported big gains in sales because of acquisitions the year before. Sony (No. 57) had a 64% increase in revenues in its first full year as owner of CBS Records. Strong perfor-

THE BIGGEST COMPANIES BY INDUSTRY

INDUSTRY	COMPANY	COUNTRY	SALES $ millions
AEROSPACE	BOEING	U.S.	$20,276
APPAREL	LEVI STRAUSS ASSOCIATES	U.S.	$3,628
BEVERAGES	PEPSICO	U.S.	$15,420
BUILDING MATERIALS	HANSON	BRITAIN	$11,833
CHEMICALS	E.I. DU PONT DE NEMOURS	U.S.	$35,209
COMPUTERS (INCLUDES OFFICE EQUIPMENT)	IBM	U.S.	$63,438
ELECTRONICS	GENERAL ELECTRIC	U.S.	$55,264
FOOD	PHILIP MORRIS	U.S.	$39,069
FOREST PRODUCTS	INTERNATIONAL PAPER	U.S.	$11,378
FURNITURE	JOHNSON CONTROLS	U.S.	$3,690
INDUSTRIAL AND FARM EQUIPMENT	ASEA BROWN BOVERI	SWITZERLAND	$21,209
METAL PRODUCTS	NKK	JAPAN	$10,926
METALS	IRI	ITALY	$49,077
MINING, CRUDE-OIL PRODUCTION	INI	SPAIN	$15,277
MOTOR VEHICLES AND PARTS	GENERAL MOTORS	U.S.	$126,974
PETROLEUM REFINING	EXXON	U.S.	$86,656
PHARMACEUTICALS	JOHNSON & JOHNSON	U.S.	$9,844
PUBLISHING, PRINTING	DAI NIPPON PRINTING	JAPAN	$7,892
RUBBER AND PLASTICS PRODUCTS	BRIDGESTONE	JAPAN	$12,379
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT	EASTMAN KODAK	U.S.	$18,546
SOAPS, COSMETICS	PROCTER & GAMBLE	U.S.	$21,689
TEXTILES	ASAHI CHEMICAL INDUSTRY	JAPAN	$7,992
TOBACCO	BAT INDUSTRIES	BRITAIN	$23,529
TOYS, SPORTING GOODS	YAMAHA	JAPAN	$3,794
TRANSPORTATION EQUIPMENT	KAWASAKI HEAVY INDUSTRIES	JAPAN	$6,906

mances by most of the company's electronics divisions helped too. Bridgestone's sales rose by a third, largely because of the company's 1988 buyout of Firestone, the U.S. tiremaker.

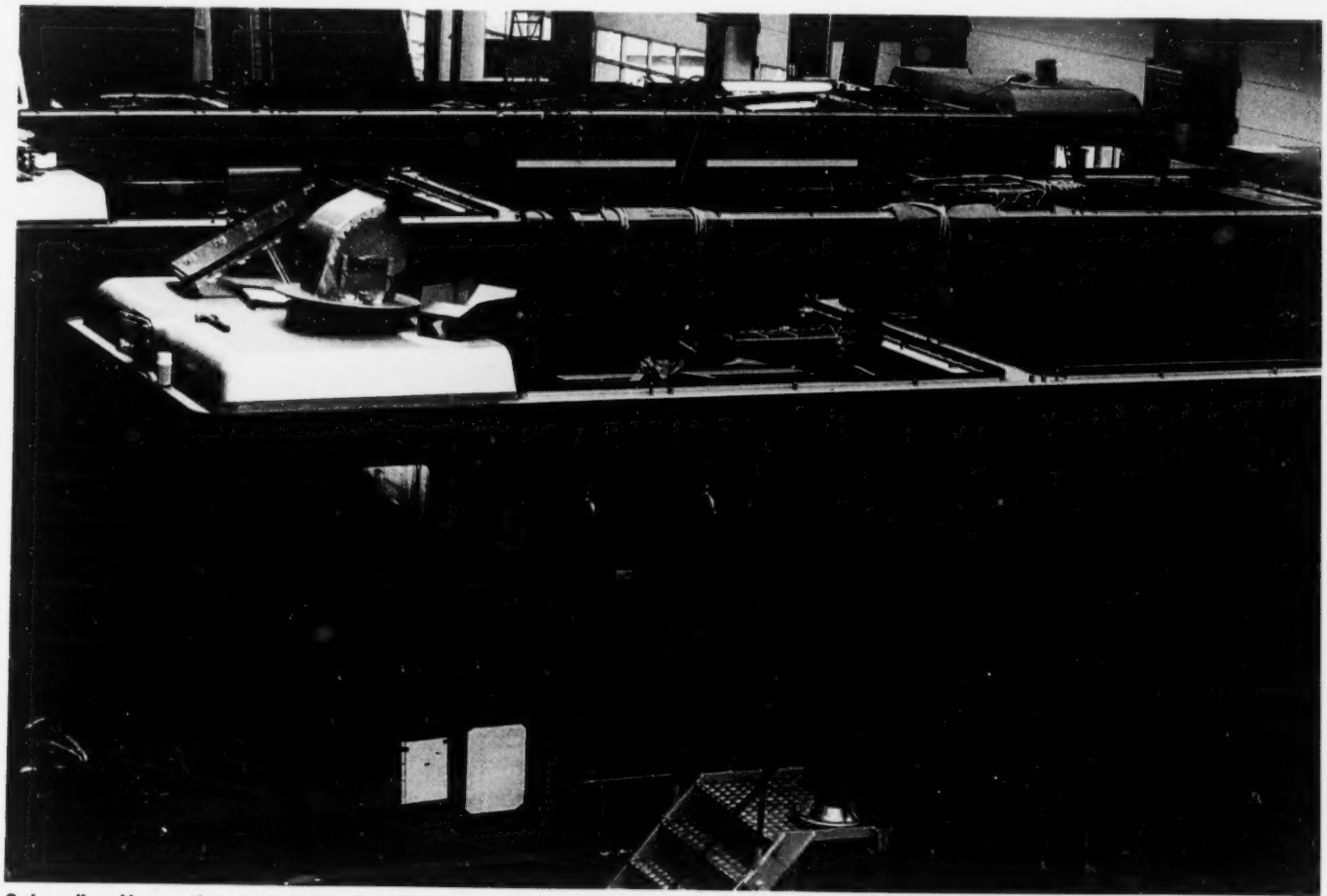
Two Japanese high-tech companies had strong results without major acquisitions. Hitachi, which makes everything from vacuum cleaners to computers, got into the top ten, in the No. 9 position. Fujitsu expanded its personal computer and telecommunications businesses to move into the top 50, at No. 49.

Sales of Nissan Motor (No. 17) jumped 23% to $36 billion. The company had notable success in raising its share of the hot market for high-priced sporty cars, both in Japan and in the U.S. Toyota (No. 6) and Honda (No. 30), riding the same trend at home and abroad, increased their revenues 19% each.

But "car" was not a magic word for all. Volvo had a 7% decline in revenues, partly due to currency fluctuations that weakened its global competitiveness. The Swedish automaker's profits were hurt by increased costs at home. Volkswagen's sales strengthened a bit, but not anywhere near as much as did those of its Japanese competitors.

THE GRANDES DAMES of food companies, No. 18 Unilever, which, though famous for soap, is classified as a food company because the largest portion of its revenue comes from such brands as Lipton Tea and Ragú spaghetti sauce, and Nestlé (No. 26), held their ground. Aggressive Philip Morris (No. 14) and Britain's Grand Metropolitan (No. 73) ate their way up the ranks with a series of acquisitions. Philip Morris, with subsidiaries Kraft and General Foods, had revenue gains of 51%. Grand Met, new owner of Pillsbury and Burger King, raised its sales by 58%.

As the boundaries of business loosen, the worldwide opportunities expand. In 1992 the last of the European Community's internal trade barriers will disappear. The two Germanies are speeding toward unification. Western companies have already begun to invest in the old East bloc—Volkswagen in East Germany, GE in Hungary, McDonald's in the Soviet Union. At some point investment is likely to flow in the other direction. Perhaps early in the 21st century, or sooner, a Czechoslovak company will make FORTUNE's top 100. **–Jung Ah Pak and Sally Solo**



GÖTZ GEORG LINZENMEIER VISUM

Swiss railroad locomotives, being built in Asea Brown Boveri's plant in Zurich, are just part of the company's worldwide heavy electrical equipment business.

1989			SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES		INDUSTRY TABLE NUMBER
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
1	GENERAL MOTORS	U.S.	126,974.3	4,224.3	2	173,297.1	1	34,982.5	3	775,100	1	17
2	FORD MOTOR	U.S.	96,932.6	3,835.0	4	160,893.3	2	22,727.8	7	366,641	6	17
3	EXXON	U.S.	86,656.0	3,510.0	7	83,219.0	5	30,244.0	4	104,000	62	18
4	ROYAL DUTCH/SHELL GROUP	BRITAIN/NETHERLANDS	85,527.9	6,482.7	1	91,011.0	4	48,307.5	1	135,000	39	18
5	INT'L BUSINESS MACHINES	U.S.	63,438.0	3,758.0	5	77,734.0	6	38,509.0	2	383,220	4	6
6	TOYOTA MOTOR[1]	JAPAN	60,443.6	2,631.1	12	49,672.8	10	25,761.0	5	91,790	70	17
7	GENERAL ELECTRIC	U.S.	55,264.0	3,939.0	3	128,344.0	3	20,890.0	9	292,000	11	7
8	MOBIL	U.S.	50,976.0	1,809.0	20	39,080.0	15	16,274.0	12	67,900	102	18
9	HITACHI[2]	JAPAN	50,894.0	1,446.7	33	52,253.2	7	17,184.3	11	274,508	13	7
10	BRITISH PETROLEUM	BRITAIN	49,484.4	3,498.8**	8	51,042.4	8	17,412.4	10	119,850	51	18
11	IRI	ITALY	49,077.2	1,177.7	38	N.A.		N.A.		416,200	3	15
12	MATSUSHITA ELECTRIC INDUSTRIAL[2]	JAPAN	43,086.0	1,664.0	26	48,217.9	11	21,590.1	8	193,088	20	7
13	DAIMLER-BENZ	W. GERMANY	40,616.0	3,584.6	6	37,133.5	17	9,710.6	22	368,226	5	17
14	PHILIP MORRIS	U.S.	39,069.0	2,946.0	9	38,528.0	16	9,571.0	23	157,000	31	8
15	FIAT	ITALY	36,740.8	2,410.8	16	46,355.2	12	12,597.5	17	286,294	12	17
16	CHRYSLER	U.S.	36,156.0	359.0	169	51,038.0	9	7,233.0	39	121,947	50	17
17	NISSAN MOTOR[1]	JAPAN	36,078.4	889.7	64	35,713.4	19	12,422.3	18	117,330	52	17
18	UNILEVER	BRITAIN/NETHERLANDS	35,284.4	1,729.7	24	20,804.4	47	4,441.5	88	300,000	10	8
19	E.I. DU PONT DE NEMOURS	U.S.	35,209.0	2,480.0	14	34,715.0	20	15,798.0	13	145,787	35	5
20	SAMSUNG	SOUTH KOREA	35,189.1	515.1	119	28,415.6	32	3,561.8	120	176,947	22	7
21	VOLKSWAGEN	W. GERMANY	34,746.4	523.2	116	33,661.7	23	6,810.2	41	250,616	15	17
22	SIEMENS[1]	W. GERMANY	32,659.6	786.8	71	34,390.5	21	9,531.9	24	365,000	7	7
23	TEXACO	U.S.	32,416.0	2,413.0	15	25,636.0	34	9,180.0	25	37,067	210	18
24	TOSHIBA[2]	JAPAN	29,469.3	930.8	58	31,676.8	25	6,630.7	49	125,000	46	7
25	CHEVRON	U.S.	29,443.0	251.0	235	33,884.0	22	13,980.0	15	54,826	134	18
26	NESTLÉ	SWITZERLAND	29,364.8[3]	1,474.5	31	22,976.0	41	8,565.2	28	196,940	19	8
27	RENAULT[1]	FRANCE	27,456.9	1,457.3	32	21,143.1	46	3,890.9	106	174,573	24	17
28	ENI	ITALY	27,119.3	1,125.9	40	41,479.1	14	10,363.1	21	82,748	81	18
29	PHILIPS' GLOEILAMPENFABRIEKEN	NETHERLANDS	26,992.5	648.1**	93	28,807.4	31	8,848.8	27	304,800	9	7
30	HONDA MOTOR[2]	JAPAN	26,484.3	758.5	74	17,206.1	63	6,789.6	42	71,200	97	17
31	BASF	W. GERMANY	25,317.0[4]	1,071.3	47	20,791.1	48	8,190.1	30	136,900	38	5
32	NEC[2]	JAPAN	24,594.8	502.6**	123	25,204.6	35	5,192.1	69	104,022	60	7
33	HOECHST	W. GERMANY	24,403.0	1,025.6	49	19,737.8	54	6,678.9	46	169,295	26	5
34	AMOCO	U.S.	24,214.0	1,610.0	28	30,430.0	28	13,684.0	16	53,648	138	18
35	PEUGEOT	FRANCE	24,090.5	1,616.1	27	18,584.2	56	6,673.0	47	159,100	30	17
36	BAT INDUSTRIES	BRITAIN	23,528.9	2,123.2	17	18,655.5	55	7,560.7	36	311,917	8	25
37	ELF AQUITAINE[1]	FRANCE	23,501.4	1,132.4	39	33,261.9	24	10,885.0	19	78,179	89	18
38	BAYER	W. GERMANY	23,021.2[4]	1,107.5	42	21,388.6	45	9,154.2	26	170,200	25	5
39	CGE (CIE GÉNÉRALE D'ÉLECTRICITÉ)	FRANCE	22,575.0	774.5	72	31,018.2	27	4,723.6	81	210,300	16	7
40	IMPERIAL CHEMICAL INDUSTRIES	BRITAIN	21,889.4	1,733.0**	23	18,197.0	57	8,095.1	31	133,800	41	5
41	PROCTER & GAMBLE[1]	U.S.	21,689.0	1,206.0	36	16,351.0	68	6,215.0	54	79,300	87	23
42	MITSUBISHI ELECTRIC[2]	JAPAN	21,213.3	415.0	146	20,380.6	50	4,812.8	79	85,723	78	7
43	ASEA BROWN BOVERI	SWITZERLAND	21,209.0	589.0	102	24,156.0	38	3,907.0	104	189,493	21	11
44	NIPPON STEEL[2]	JAPAN	20,767.0	607.9	98	26,143.7	33	5,486.2	62	64,504	109	15
45	BOEING	U.S.	20,276.0	973.0	51	13,278.0	92	6,131.0	55	159,200	29	1
46	OCCIDENTAL PETROLEUM	U.S.	20,068.0	285.0	206	20,741.0	49	5,899.0	57	53,500	140	8
47	DAEWOO	SOUTH KOREA	19,981.4	114.5	360	28,986.2	30	4,645.3	84	91,056	71	7
48	UNITED TECHNOLOGIES[5]	U.S.	19,765.5	702.1	84	14,598.2	80	4,740.3	80	201,400	17	1
49	FUJITSU[2]	JAPAN	18,734.1	541.1	110	19,770.5	53	7,239.4	38	104,503	59	6
50	EASTMAN KODAK	U.S.	18,546.0	529.0	112	23,652.0	39	6,642.0	48	137,750	37	22

The definitions and concepts underlying the figures in this directory are explained on page 316. Footnotes appear on page 296.

1989

			SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES		INDUSTRY TABLE NUMBER
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
51	THYSSEN[3]	W. GERMANY	18,298.9[4]	408.0	151	11,154.3	111	2,430.5	178	133,824	40	15
52	USX	U.S.	17,755.0	965.0	52	17,500.0	59	5,737.0	61	53,610	139	18
53	DOW CHEMICAL	U.S.	17,730.0	2,487.0	13	22,166.0	44	7,957.0	33	62,111	116	5
54	XEROX	U.S.	17,635.0	704.0	82	30,088.0	29	5,035.0	74	111,400	54	22
55	TOTAL	FRANCE	16,926.8	346.1	177	15,313.0	74	3,736.6	114	41,200	189	18
56	MITSUBISHI MOTORS[2]	JAPAN	16,839.9	147.4	330	11,276.0	108	1,740.8	248	37,908	205	17
57	SONY[2]	JAPAN	16,680.2	563.8	107	17,811.1	58	6,867.6	40	78,900	88	7
58	PETROBRÁS[5]	BRAZIL	16,359.9	512.6	122	16,065.5	70	8,320.9	29	67,676	103	18
59	ROBERT BOSCH	W. GERMANY	16,263.0[4]	332.8	183	13,142.9	94	3,946.7	102	174,742	23	17
60	ATLANTIC RICHFIELD	U.S.	15,905.0	1,953.0	18	22,261.0	43	6,562.0	50	26,600	283	18
61	USINOR[3]	FRANCE	15,630.1	1,061.0	48	17,121.8	64	3,358.7	130	96,933	66	15
62	MAZDA MOTOR[2]	JAPAN	15,572.5[7]	99.1[7]	372	9,906.2	125	2,599.2	164	28,382	270	17
63	PEPSICO	U.S.	15,419.6	901.4	63	15,126.7	75	3,891.1	105	266,000	14	3
64	INI[5]	SPAIN	15,277.4	702.6[7]	83	31,245.4	26	6,121.7	56	151,423	34	16
65	PEMEX (PETRÓLEOS MEXICANOS)[5]	MEXICO	15,257.8[8]	320.1[8]	188	42,314.4[8]	13	24,200.2[8]	6	164,744[8]	27	18
66	RJR NABISCO HOLDINGS[1]	U.S.	15,224.0	(1,149.0)	497	36,412.0	18	1,237.0	320	48,000	154	8
67	MITSUBISHI HEAVY INDUSTRIES[2]	JAPAN	15,007.1	482.3	126	23,527.1	40	5,815.4	58	55,500	130	11
68	MCDONNELL DOUGLAS	U.S.	14,995.0	219.0	262	13,397.0	89	3,287.0	132	127,926	42	1
69	BRITISH AEROSPACE	BRITAIN	14,895.2	382.0	160	14,814.7	78	3,842.5	109	125,600	45	1
70	VOLVO	SWEDEN	14,637.7	836.9	68	16,245.1	69	5,249.3	68	75,340	93	17
71	NIPPON OIL[2]	JAPAN	14,562.7	216.3	266	13,388.2	90	3,626.6	117	9,669	449	18
72	TENNECO	U.S.	14,439.0	584.0	105	17,381.0	62	3,277.0	133	90,000	73	11
73	GRAND METROPOLITAN[3]	BRITAIN	14,274.6	1,805.9**	21	15,450.8	73	4,536.7	85	152,175	33	8
74	BMW (BAYERISCHE MOTOREN WERKE)	W. GERMANY	14,097.7	296.2	197	12,245.5	96	3,152.6	138	66,267	104	17
75	PECHINEY[3]	FRANCE	13,986.8	523.5	115	13,416.5	88	2,486.7	171	70,000	99	15
76	PETRÓLEOS DE VENEZUELA[5]	VENEZUELA	13,677.3	2,718.0	11	8,907.0	144	6,551.7	52	46,940	159	18
77	ELECTROLUX	SWEDEN	13,299.8	355.1	173	10,591.5	118	2,360.1	187	152,913	32	7
78	DIGITAL EQUIPMENT[1]	U.S.	12,866.0	1,072.6	46	10,667.8	117	8,035.7	32	125,800	43	6
79	WESTINGHOUSE ELECTRIC	U.S.	12,844.0	922.0	62	20,314.0	51	4,384.0	90	121,963	49	7
80	ROCKWELL INTERNATIONAL[1]	U.S.	12,633.1	734.9	79	8,938.8	143	3,977.6	101	108,715	56	1
81	CIBA-GEIGY	SWITZERLAND	12,597.9[4]	951.8	54	16,926.0	65	10,536.7	20	92,553	69	5
82	PHILLIPS PETROLEUM	U.S.	12,492.0	219.0	263	11,256.0	109	2,132.0	202	21,800	333	18
83	RUHRKOHLE	W. GERMANY	12,422.1	30.0	447	13,686.7	86	757.9	409	124,838	47	16
84	BRIDGESTONE	JAPAN	12,379.1	68.2	407	11,408.3	103	3,056.4	141	93,193	68	21
85	FERRUZZI FINANZIARIA	ITALY	12,046.9[4]	226.8	252	24,922.7	36	2,513.0	170	44,546	173	8
86	THOMSON[3]	FRANCE	12,027.1	78.0	398	16,863.5	66	1,535.5	274	100,000	65	7
87	ALLIED-SIGNAL	U.S.	12,021.0	528.0	114	10,132.0	122	3,412.0	125	107,100	57	1
88	MINNESOTA MINING & MFG.	U.S.	11,990.0	1,244.0	35	9,776.0	128	5,378.0	66	87,600	76	22
89	HEWLETT-PACKARD[10,11]	U.S.	11,899.0	829.0	70	10,075.0	123	5,446.0	64	95,000	67	6
90	MANNESMANN	W. GERMANY	11,872.5	246.2	241	9,600.4	132	2,721.7	158	125,785	44	11
91	HANSON[3]	BRITAIN	11,833.0	1,861.7**	19	17,477.0	60	1,753.3	244	89,000	74	4
92	KUWAIT PETROLEUM[1,5]	KUWAIT	11,796.5	735.2	78	22,725.9	42	14,655.4	14	15,372	396	18
93	SARA LEE[1]	U.S.	11,738.3	410.5	150	6,522.7	202	1,914.9	221	100,000	64	8
94	BTR	BRITAIN	11,544.0	1,082.1	44	9,759.7	129	2,578.4	165	109,501	55	4
95	RHÔNE-POULENC[5]	FRANCE	11,463.1	642.0	95	14,406.3	82	3,684.1	115	86,100	77	5
96	INTERNATIONAL PAPER	U.S.	11,378.0	864.0	66	11,582.0	100	5,147.0	71	63,500	113	9
97	CONAGRA[12]	U.S.	11,340.4	197.9	283	4,278.2	302	949.5	379	48,131	153	8
98	PETROFINA	BELGIUM	11,269.7	554.2	108	10,349.3	120	4,029.9	99	23,600	317	18
99	IDEMITSU KOSAN[2]	JAPAN	11,249.3[8]	13.1[8]	467	9,844.5[8]	126	327.4[8]	474	5,292[8]	482	18
100	ENIMONT	ITALY	11,191.5	522.1	117	14,192.6	83	4,194.9	94	52,656	142	5

The definitions and concepts underlying the figures in this directory are explained on page 316. Footnotes appear on page 296.

1989			SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES		INDUSTRY TABLE NUMBER
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
101	ALUMINUM CO. OF AMERICA	U.S.	11,161.5	944.9	56	11,540.6	102	5,266.9	67	60,600	118	15
102	CATERPILLAR	U.S.	11,126.0	497.0	125	10,926.0	113	4,474.0	87	60,409	119	11
103	GOODYEAR TIRE & RUBBER	U.S.	11,044.7	206.8	275	8,460.3	159	2,143.8	201	111,469	53	21
104	NKK[2]	JAPAN	10,925.8	714.5	81	20,088.0	52	2,372.8	185	29,993	261	14
105	METALLGESELLSCHAFT[3]	W. GERMANY	10,753.2	75.9	399	4,856.9	275	695.3	422	24,496	307	15
106	INDIAN OIL[4,5]	INDIA	10,609.7	356.3	172	4,253.1	304	1,425.8	285	33,776	231	18
107	SANYO ELECTRIC[3]	JAPAN	10,486.9[14]	123.6	350	14,184.0	84	4,987.3	76	55,526	129	7
108	BARLOW RAND[3]	SOUTH AFRICA	10,417.7[4]	358.1	171	5,934.7	218	1,268.5	315	159,779	28	8
109	UNOCAL	U.S.	10,417.0	260.0	224	9,257.0	137	2,300.0	195	17,286	379	18
110	SAINT-GOBAIN	FRANCE	10,403.1	676.3	88	13,481.6	87	4,209.4	93	87,816	75	4
111	GEC (GENERAL ELECTRIC CO.)[2]	BRITAIN	10,396.0	923.9	61	9,464.8	134	5,033.5	75	145,029	36	7
112	ELDERS IXL[1]	AUSTRALIA	10,338.7	513.8	121	7,487.2	180	2,943.5	146	33,702	233	8
113	GEORGIA-PACIFIC	U.S.	10,171.0	661.0	89	7,056.0	188	2,717.0	160	44,000	177	9
114	WEYERHAEUSER	U.S.	10,105.6	341.1	180	15,976.0	72	4,147.6	97	45,214	168	9
115	UNISYS	U.S.	10,096.9	(639.3)	494	10,751.0	115	3,881.6	107	82,300	83	6
116	RTZ	BRITAIN	10,093.0	1,359.2[**]	34	11,739.0	99	4,120.2	98	77,592	91	16
117	GENERAL DYNAMICS	U.S.	10,053.2	293.1	198	6,548.6	201	2,125.6	203	102,200	63	1
118	CANON	JAPAN	10,023.6[14]	277.5	212	11,379.6	105	3,830.6	110	44,401	175	6
119	REPSOL	SPAIN	9,998.3	544.5	109	8,938.8	142	3,386.6	127	19,171	363	18
120	LOCKHEED	U.S.	9,932.0	2.0	470	6,792.0	194	2,062.0	206	82,500	82	1
121	SHARP[3]	JAPAN	9,927.5[14]	226.0	253	13,291.1	91	4,027.7	100	32,298	245	7
122	SUN	U.S.	9,927.0	98.0	373	8,699.0	149	3,254.0	135	21,600	335	18
123	KOBE STEEL[3]	JAPAN	9,886.3	198.3	282	14,959.0	77	1,782.5	238	24,456	308	15
124	ISUZU MOTORS[3]	JAPAN	9,867.7[14]	122.2	352	7,233.9	185	1,084.4	348	24,335	311	17
125	JOHNSON & JOHNSON	U.S.	9,844.0	1,082.0	45	7,919.0	169	4,148.0	96	83,100	80	19
126	NIPPONDENSO	JAPAN	9,663.2[14]	348.4	175	9,005.8	141	4,159.7	95	49,390	150	17
127	SUMITOMO METAL INDUSTRIES[3]	JAPAN	9,643.0	451.8	134	14,759.5	79	2,868.0	149	26,753	281	15
128	MOTOROLA	U.S.	9,620.0	498.0	124	7,686.0	172	3,803.0	111	104,000	61	7
129	NORSK HYDRO	NORWAY	9,599.0	388.9	158	11,288.1	107	2,788.5	151	32,782	243	5
130	COSMO OIL	JAPAN	9,488.4	81.9	394	8,000.3	167	504.1	445	3,700	491	18
131	ANHEUSER-BUSCH	U.S.	9,481.3	767.2	73	9,025.7	140	3,099.9	139	46,608	162	3
132	BRISTOL-MYERS SQUIBB[3]	U.S.	9,422.0	747.0	77	8,497.0	157	5,084.0	72	54,100	137	19
133	FRIED. KRUPP	W. GERMANY	9,402.1	(272.3)	489	5,957.3	217	462.8	452	63,557	112	11
134	CANADIAN PACIFIC	CANADA	9,306.3[4]	629.3	97	16,449.3	67	6,732.7	44	75,600	92	9
135	MAN[1]	W. GERMANY	9,176.9	128.0	345	7,704.5	171	1,292.3	308	62,048	117	11
136	COCA-COLA	U.S.	9,170.8	1,723.8	25	8,282.5	162	3,485.5	123	20,960	340	3
137	BROKEN HILL PROPRIETARY[1]	AUSTRALIA	9,127.2	924.6	60	15,039.9	76	5,037.1	73	49,000	151	15
138	KAWASAKI STEEL[3]	JAPAN	9,081.2	378.1	163	13,266.2	93	2,767.8	155	24,455	309	15
139	SUNKYONG	SOUTH KOREA	9,014.0	154.3	324	6,711.0	198	1,679.0	254	21,876	331	18
140	PREUSSAG	W. GERMANY	8,987.3	149.1	327	7,663.4	173	653.8	429	65,705	105	15
141	ALCAN ALUMINIUM	CANADA	8,839.0[4]	835.0	69	9,508.0	133	4,822.0	78	57,000	124	14
142	AKZO	NETHERLANDS	8,837.8	450.1	135	7,484.4	181	2,357.3	189	70,900	98	5
143	RAYTHEON	U.S.	8,796.1	528.8	113	5,338.3	250	2,426.1	179	77,600	90	7
144	UNION CARBIDE	U.S.	8,744.0	573.0	106	8,546.0	152	2,383.0	183	45,987	166	5
145	STATOIL[5]	NORWAY	8,734.6	734.2	80	9,787.9	127	1,594.5	264	11,023	433	18
146	MONSANTO	U.S.	8,681.0	679.0	87	8,604.0	150	3,941.0	103	42,179	184	5
147	BRITISH STEEL[1]	BRITAIN	8,676.9	992.2	50	8,798.4	147	6,317.8	53	55,200	133	15
148	MICHELIN	FRANCE	8,668.7	384.3	159	11,817.1	98	2,992.1	143	124,408	48	21
149	MITSUBISHI KASEI[3]	JAPAN	8,649.5[7]	157.0[7]	321	10,719.9	116	1,560.8	269	19,075	364	5
150	COASTAL	U.S.	8,607.1	170.1	310	8,773.3	148	1,793.0	237	13,232	413	18

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			SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES		INDUSTRY TABLE NUMBER
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
151	TAIYO FISHERY[2]	JAPAN	8,326.1[7]	60.3[7]	414	3,376.3	372	313.4	477	7,988	459	8
152	SHOWA SHELL SEKIYU	JAPAN	8,229.9	46.3	431	5,661.4	227	498.9	448	N.A.		18
153	DALGETY[1]	BRITAIN	8,159.7	116.1‡	359	2,349.8	446	690.9	423	22,503	325	8
154	NESTE[5]	FINLAND	8,123.9	434.4	139	8,497.8	156	3,230.9	136	11,958	426	18
155	ASAHI GLASS	JAPAN	8,088.4[14]	426.7	141	8,530.2	153	3,583.5	119	17,605	376	5
156	ARCHER-DANIELS-MIDLAND[1]	U.S.	8,056.5	424.7	142	4,728.3	284	3,033.5	142	10,214	443	8
157	SMITHKLINE BEECHAM[16]	BRITAIN	8,028.8	213.3‡	271	6,048.9	213	(478.7)	495	62,800	115	19
158	ASHLAND OIL[3]	U.S.	8,016.6	86.2	389	4,455.7	291	1,140.5	334	37,800	206	18
159	CHINESE PETROLEUM[5]	TAIWAN	8,008.2	1,776.2	22	10,390.6	119	7,877.3	34	22,357	326	18
160	ASAHI CHEMICAL INDUSTRY[2]	JAPAN	7,991.6	268.2	216	7,560.3	174	2,443.8	177	22,908	322	24
161	DAI NIPPON PRINTING[2]	JAPAN	7,891.8	273.9	213	7,171.1	186	3,408.6	126	20,799	342	20
162	DEGUSSA[3]	W. GERMANY	7,864.3	93.1	378	3,541.4	361	748.8	412	33,698	235	15
163	NORANDA	CANADA	7,802.1[4]	373.3	167	12,127.8	97	3,846.3	108	58,998	120	9
164	JAPAN TOBACCO[2,5]	JAPAN	7,769.1[8]	298.2[8]	195	11,308.8[8]	106	7,580.3[8]	35	26,700[8]	282	25
165	SANDOZ	SWITZERLAND	7,766.1	585.6	104	7,751.5	170	4,267.4	91	50,655	145	19
166	BSN	FRANCE	7,738.9	423.3	144	9,752.2	130	3,274.7	134	49,693	149	8
167	TIME WARNER[17]	U.S.	7,642.0	(256.0)	488	24,791.0	37	6,756.0	43	35,000	222	20
168	BRITISH COAL[2,5]	BRITAIN	7,596.3	(359.0)	490	10,958.9	112	5,461.7	63	105,045	58	16
169	BORDEN	U.S.	7,593.4	(60.6)	478	4,824.9	277	1,645.4	256	46,500	163	8
170	PIRELLI	ITALY/SWITZERLAND	7,541.5	174.4	304	9,144.0	139	2,358.0	188	69,329	100	21
171	VEBA OEL	W. GERMANY	7,491.9	21.8	459	3,328.8	375	747.4	413	20,481	346	18
172	TEXTRON	U.S.	7,440.1	259.2	225	13,790.4	85	2,547.1	169	58,000	123	1
173	SSANGYONG	SOUTH KOREA	7,421.8	171.9**	308	11,543.8	101	2,553.7	167	20,932	341	18
174	TRW	U.S.	7,408.0	263.0	221	5,259.0	253	1,749.0	245	74,300	94	7
175	SUZUKI MOTOR[2]	JAPAN	7,403.9	50.2	428	4,702.0	285	1,283.7	310	23,544	319	17
176	BAXTER INTERNATIONAL	U.S.	7,399.0	446.0	136	8,503.0	155	4,246.0	92	64,300	110	22
177	FUJI PHOTO FILM[14]	JAPAN	7,367.7	650.2	92	9,280.8	136	5,754.7	59	19,677	354	22
178	AMERICAN BRANDS	U.S.	7,264.7	630.8	96	11,394.2	104	2,965.9	145	47,300	157	25
179	HONEYWELL	U.S.	7,241.6	604.1	99	5,258.2	254	1,918.2	220	65,312	108	7
180	DEERE[10]	U.S.	7,221.0	380.2	162	9,145.4	138	2,780.3	152	38,949	198	11
181	SAAB-SCANIA	SWEDEN	7,219.0	156.4	322	7,496.5	178	1,348.1	298	48,708	152	17
182	TOPPAN PRINTING[2]	JAPAN	7,216.9	225.2	254	5,932.2	219	2,773.4	153	14,530	402	20
183	SNOW BRAND MILK PRODUCTS[2]	JAPAN	7,188.5	51.7	426	3,060.0	399	676.1	427	14,269	403	8
184	SCHNEIDER	FRANCE	7,079.7	137.6	338	7,957.4	168	1,167.6	332	80,658	85	7
185	EMERSON ELECTRIC[3]	U.S.	7,071.3	588.0	103	5,408.0	245	3,073.4	140	72,600	96	7
186	SUMITOMO CHEMICAL	JAPAN	6,938.0	253.1	230	7,497.6	177	1,455.1	280	12,537	422	5
187	KAWASAKI HEAVY INDUSTRIES[2]	JAPAN	6,905.6	90.6	382	7,490.0	179	705.9	418	19,747	353	27
188	SUMITOMO ELECTRIC INDUSTRIES[2]	JAPAN	6,878.1	179.2	296	5,737.0	224	2,055.8	208	27,044	277	14
189	ALLIED-LYONS[19]	BRITAIN	6,870.7	601.2	100	9,281.6	135	5,177.9	70	81,440	84	3
190	AMERICAN HOME PRODUCTS[20]	U.S.	6,747.0	1,102.2	43	5,681.5	225	1,970.0	217	50,816	143	19
191	BERTELSMANN[1]	W. GERMANY	6,717.1	138.4	337	3,792.3	330	788.2	404	43,702	178	20
192	RALSTON PURINA[3]	U.S.	6,711.6	422.5	145	4,381.7	297	831.7	395	56,219	126	8
193	MERCK	U.S.	6,698.4	1,495.4	30	6,756.7	196	3,520.6	122	34,400	227	19
194	MITSUBISHI METAL[2]	JAPAN	6,698.2[14]	88.2	386	5,508.9	238	810.3	400	11,281	431	15
195	SOLVAY	BELGIUM	6,692.7	393.0	155	6,840.1	192	2,425.1	180	45,011	169	27
196	MATSUSHITA ELECTRIC WORKS[13]	JAPAN	6,656.5	231.5	247	6,011.2	214	2,397.9	182	20,681	344	11
197	TEXAS INSTRUMENTS	U.S.	6,592.2	291.7	200	4,804.4	278	2,484.9	172	73,854	95	7
198	OLIVETTI	ITALY	6,585.8	147.9	328	10,921.7	114	2,855.1	150	56,937	125	6
199	FLETCHER CHALLENGE[1]	NEW ZEALAND	6,571.7	407.1	152	8,076.1	164	2,237.6	197	37,000	211	9
200	STORA KOPPARBERGS BERGSLAGS	SWEDEN	6,549.9	250.8**	237	8,906.0	145	1,389.0	290	53,250	141	9

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1989			SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES		INDUSTRY TABLE NUMBER
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
201	POHANG IRON & STEEL	SOUTH KOREA	6,471.9	214.3	269	13,125.9	95	6,685.4	45	22,518	324	15
202	NEWS CORP.[1]	AUSTRALIA	6,453.0	949.5**	55	14,411.7	81	4,692.3	82	30,908	255	20
203	KOÇ HOLDING	TURKEY	6,414.9[4]	220.4	261	2,458.8	439	432.8	458	37,321	209	17
204	ROCHE/SAPAC	SWITZERLAND	6,369.8	520.8	118	11,213.5	110	7,543.2	37	50,203	146	5
205	LTV	U.S.	6,362.1	264.9	220	6,336.2	206	(4,919.8)	497	38,000	202	15
206	KOMATSU[2]	JAPAN	6,349.1	162.4	317	8,503.1	154	3,351.5	131	21,633	334	11
207	W.R. GRACE	U.S.	6,330.8	253.2	229	5,619.1	230	1,730.4	250	49,700	148	5
208	WHIRLPOOL	U.S.	6,318.9	187.2	288	5,353.5	248	1,421.4	286	39,411	195	7
209	ISHIKAWAJIMA-HARIMA HEAVY IND.[2]	JAPAN	6,290.1	103.3	368	8,550.7	151	1,016.1	360	26,178	287	11
210	NIPPON MINING[2]	JAPAN	6,250.1[14]	105.6	366	7,048.1	189	1,108.6	343	11,351	430	18
211	TORAY INDUSTRIES[2]	JAPAN	6,250.0	260.9	223	7,284.5	184	2,630.0	163	26,211	286	24
212	L.M. ERICSSON	SWEDEN	6,249.6	327.0	185	6,582.8	200	1,991.3	215	69,229	101	7
213	BICC	BRITAIN	6,217.1[4]	190.2	286	3,096.6	395	621.6	432	46,035	164	14
214	REYNOLDS METALS	U.S.	6,201.0	532.7	111	5,555.6	234	2,684.1	162	30,500	258	15
215	HENKEL	W. GERMANY	6,188.2	214.8	268	5,054.9	264	1,906.0	222	38,145	201	5
216	NORTHERN TELECOM	CANADA	6,105.5	376.5	164	6,375.0	204	2,768.8	154	47,572	155	7
217	HILLSDOWN HOLDINGS	BRITAIN	6,046.9	246.6	240	2,860.9	411	830.0	396	40,558	192	8
218	NCR	U.S.	5,956.0	412.0	149	4,500.0	287	1,985.0	216	56,000	127	6
219	PFIZER	U.S.	5,903.7	681.1	86	8,324.8	160	4,535.8	86	42,100	185	19
220	JAMES RIVER CORP. OF VIRGINIA[1]	U.S.	5,901.6	255.1	228	5,558.1	233	2,345.8	191	36,000	216	9
221	HYUNDAI MOTOR	SOUTH KOREA	5,845.1	62.1	413	5,502.1	239	1,217.9	321	40,300	193	17
222	H.J. HEINZ[21]	U.S.	5,831.9	440.2	138	4,001.8	317	1,777.2	240	36,200	215	8
223	PPG INDUSTRIES	U.S.	5,825.2	465.2	130	5,645.4	228	2,282.3	196	35,500	218	5
224	ARBED	LUXEMBOURG	5,824.2	251.2	234	6,765.2	195	1,542.4	273	54,237	135	15
225	THORN EMI[2]	BRITAIN	5,819.9	307.0	191	3,778.9	334	994.3	365	65,444	107	7
226	MARTIN MARIETTA	U.S.	5,814.3	306.9	192	3,505.4	364	1,355.0	296	65,500	106	1
227	GENERAL MILLS[12]	U.S.	5,798.0	414.3	147	2,888.1	410	731.9	416	83,837	79	8
228	BOND CORP. HOLDINGS[1]	AUSTRALIA	5,779.9[7]	(799.8)‡	496	8,844.6	146	(87.6)	491	N.A.		3
229	RICOH[2]	JAPAN	5,779.5[14]	138.7	336	5,499.9	240	2,414.2	181	34,400	228	6
230	KIMBERLY-CLARK	U.S.	5,777.1	423.8	143	4,923.0	273	2,085.8	204	39,664	194	9
231	SALZGITTER[3]	W. GERMANY	5,747.2	182.0	292	4,121.0	311	1,125.1	339	39,006	196	15
232	AÉROSPATIALE[5]	FRANCE	5,735.7	20.2	462	7,426.9	183	891.2	386	36,899	212	1
233	QUAKER OATS[1]	U.S.	5,724.3	203.0	278	3,221.9	381	1,137.1	335	31,700	248	8
234	DAIHATSU MOTOR[2]	JAPAN	5,715.4	51.0	427	3,593.4	354	833.9	394	18,570	369	17
235	CAMPBELL SOUP[22]	U.S.	5,710.4	13.1	468	3,932.1	323	1,778.3	239	55,412	132	8
236	TATE & LYLE[3]	BRITAIN	5,681.3[8]	191.2	284	3,153.6	386	687.1	424	18,606	368	8
237	HOESCH	W. GERMANY	5,677.6	38.2	442	5,121.4	259	850.7	392	44,500	174	11
238	BASS[3]	BRITAIN	5,654.4	645.9	94	7,559.1	175	4,417.3	89	90,138	72	3
239	FURUKAWA ELECTRIC[2]	JAPAN	5,651.1	90.5	383	4,958.2	270	1,127.9	338	15,104	397	14
240	KUBOTA[2]	JAPAN	5,623.4[14]	143.6	334	6,268.6	208	2,356.2	190	17,500	377	11
241	AMERADA HESS	U.S.	5,589.0	476.3	127	6,867.4	191	2,560.6	166	8,740	454	18
242	DAINIPPON INK & CHEMICALS[2]	JAPAN	5,585.5	56.4	417	5,595.7	232	1,194.2	327	20,122	347	5
243	VIAG	W. GERMANY	5,547.5[4]	132.6	341	7,057.6	187	2,029.8	210	34,657	225	15
244	TAKEDA CHEMICAL[2]	JAPAN	5,454.0[14]	301.6	193	6,678.0	199	3,382.2	128	13,675	409	19
245	ABBOTT LABORATORIES	U.S.	5,453.5	859.8	67	4,851.6	276	2,726.4	157	40,929	191	19
246	LYONDELL PETROCHEMICAL	U.S.	5,374.0	374.0	166	1,267.0	488	9.0	489	2,070	493	5
247	FUJI ELECTRIC[2]	JAPAN	5,369.1	73.0	402	5,415.4	244	1,024.3	356	19,248	361	7
248	STONE CONTAINER	U.S.	5,360.7	285.8	205	6,253.7	211	1,347.6	299	32,600	244	9
249	NOKIA	FINLAND	5,308.4	36.3‡	443	5,533.6	235	1,806.5	235	41,326	188	7
250	BETHLEHEM STEEL	U.S.	5,305.9	245.7	242	4,793.3	280	2,002.9	212	30,500	257	15

The definitions and concepts underlying the figures in this directory are explained on page 316. Footnotes appear on page 296.

THE GLOBAL 500

THE WORLD'S BIGGEST INDUSTRIAL CORPORATIONS

1989

			SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES		INDUSTRY TABLE NUMBER
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
251	APPLE COMPUTER[3]	U.S.	5,284.0	454.0	132	2,743.9	417	1,485.7	276	12,068	424	6
252	CEA-INDUSTRIE[5]	FRANCE	5,255.6	345.0	178	17,457.6	61	2,216.8	198	36,800	213	5
253	CHAMPION INTERNATIONAL	U.S.	5,254.2	432.4	140	7,530.8	176	3,588.5	118	29,600	262	9
254	TOYO SEIKAN[7]	JAPAN	5,242.0	180.4	294	3,900.3	326	1,696.7	251	6,206	478	14
255	FELDMÜHLE NOBEL	W. GERMANY	5,224.4	86.2	390	4,095.7	314	1,097.5	345	35,375	220	9
256	NORTHROP	U.S.	5,200.0	(80.5)	481	3,200.0	383	875.1	389	41,000	190	1
257	BULL	FRANCE	5,191.5	(41.8)**	476	5,380.4	246	999.6	363	43,617	179	6
258	FUJI HEAVY INDUSTRIES[7]	JAPAN	5,188.4	52.3	425	5,492.3	241	2,013.4	211	18,700	366	17
259	COCKERILL SAMBRE[5]	BELGIUM	5,166.7	390.3	157	5,237.1	256	1,602.7	263	25,349	298	15
260	DANA	U.S.	5,156.7	132.1	342	5,225.4	257	1,019.9	359	37,500	208	17
261	LITTON INDUSTRIES[22]	U.S.	5,130.3	178.3	298	5,257.7	255	1,267.7	316	50,700	144	7
262	COOPER INDUSTRIES[23]	U.S.	5,129.4	267.8	217	6,745.0	197	2,696.2	161	58,100	122	7
263	CPC INTERNATIONAL	U.S.	5,129.3	327.5	184	3,704.7	342	1,217.6	322	33,542	236	8
264	THOMSON CORP.	CANADA	5,112.0	929.0**	59	6,955.0	190	2,968.0	144	44,628	172	20
265	COLGATE-PALMOLIVE	U.S.	5,110.2	280.0	211	3,536.5	362	1,123.2	340	24,100	313	23
266	DSM	NETHERLANDS	5,081.1[4]	650.9	91	5,079.4	263	2,001.0	213	29,500	263	5
267	SCOTT PAPER	U.S.	5,065.6	375.5	165	5,746.3	223	2,060.8	207	29,400	264	9
268	KANEBO[7]	JAPAN	5,035.3[14]	33.5	444	4,761.0	281	131.2	486	25,465	297	24
269	SEKISUI CHEMICAL[7]	JAPAN	5,034.2	178.4	297	4,263.1	303	1,208.4	326	9,316	451	5
270	KIRIN BREWERY	JAPAN	4,971.0[14]	220.5	260	8,289.9	161	3,443.3	124	10,478	439	3
271	TONEN[24]	JAPAN	4,891.0	184.0	290	4,747.0	282	2,455.3	175	4,213	488	18
272	ROLLS-ROYCE	BRITAIN	4,856.3	314.8	189	4,186.4	308	1,817.9	234	55,475	131	1
273	SCHLUMBERGER	NETHERLANDS ANTILLES	4,843.7[4]	441.5	137	5,481.8	242	2,897.9	147	46,000	165	22
274	AMERICAN CYANAMID	U.S.	4,825.0	292.0	199	4,971.2	268	2,321.4	193	35,394	219	5
275	OIL & NATURAL GAS COMMISSION[2,5]	INDIA	4,815.9	1,107.6	41	10,339.7	121	5,742.6	60	45,420	167	18
276	HACI ÖMER SABANCI HOLDING	TURKEY	4,810.6[4]	227.1	251	4,457.1	290	586.8	438	32,114	246	24
277	WICKES[25]	U.S.	4,801.9	(122.5)	487	3,573.3	357	1,107.8	344	38,000	203	24
278	HYOSUNG	SOUTH KOREA	4,782.4	21.5	460	3,601.5	352	1,021.6	357	24,800	305	24
279	LAFARGE COPPÉE	FRANCE	4,765.5	341.4	179	7,446.8	182	1,846.0	230	31,039	253	4
280	SIDERBRAS	BRAZIL	4,756.1	(470.7)	492	15,985.4	71	1,479.0	277	80,000	86	15
281	HÜLS	W. GERMANY	4,749.8[4]	180.6	293	4,116.3	312	1,092.0	347	31,289	252	5
282	OJI PAPER[7]	JAPAN	4,708.5	207.3	274	5,046.2	265	1,628.2	259	N.A.		9
283	KELLOGG	U.S.	4,666.2	470.2	129	3,390.4	371	1,634.4	258	17,268	380	8
284	TELEDYNE	U.S.	4,664.2	258.9	226	3,447.1	367	2,326.9	192	43,200	180	7
285	CADBURY SCHWEPPES	BRITAIN	4,661.5	290.9	201	3,434.0	368	961.1	375	34,982	223	3
286	MEAD	U.S.	4,646.6	215.8	267	3,750.0	337	1,680.8	252	21,800	332	9
287	NIPPON MEAT PACKERS[7]	JAPAN	4,640.1	89.8	385	2,712.5	420	972.1	373	14,836	401	8
288	AISIN SEIKI[7]	JAPAN	4,633.3	92.5	379	3,084.5	396	1,276.5	313	13,568	410	17
289	COURTAULDS[5]	BRITAIN	4,615.4	453.8**	133	3,047.9	404	1,272.2	314	63,200	114	5
290	HACHETTE	FRANCE	4,605.8	73.6	401	4,237.1	305	438.9	457	30,550	256	20
291	ALUSUISSE	SWITZERLAND	4,567.1	284.9	207	3,939.0	322	979.2	370	25,473	296	14
292	UBE INDUSTRIES[7]	JAPAN	4,552.9	151.0	326	6,308.2	207	504.8	444	12,622	421	4
293	PILKINGTON[5]	BRITAIN	4,550.0	312.2‡	190	4,400.2	294	1,379.7	291	58,400	121	4
294	VALE DO RIO DOCE[5]	BRAZIL	4,523.2	2,944.1	10	6,473.0	203	3,371.8	129	23,415	320	16
295	BEATRICE[19]	U.S.	4,498.0	325.0	186	3,786.0	332	816.0	399	16,400	385	8
296	KAO[7]	JAPAN	4,490.4	135.5	340	4,015.1	316	1,761.0	242	12,900	419	23
297	L'AIR LIQUIDE	FRANCE	4,482.8	333.6	181	5,962.2	216	2,370.1	186	27,000	278	5
298	TÜRKIYE PETROLLERI	TURKEY	4,457.1	273.6	214	3,786.7	331	1,870.9	226	20,530	345	18
299	CONTINENTAL	W. GERMANY	4,456.5	121.1	354	3,199.7	384	946.9	380	47,495	156	21
300	HYUNDAI HEAVY INDUSTRIES	SOUTH KOREA	4,428.9	94.3	377	5,303.7	251	1,614.5	261	50,000	147	27

The definitions and concepts underlying the figures in this directory are explained on page 316. Footnotes appear on page 296.

1989			SALES	PROFITS		ASSETS		STOCKHOLDERS' EQUITY		EMPLOYEES		INDUSTRY TABLE NUMBER
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
301	TEIJIN[2]	JAPAN	4,424.4	158.1	319	6,263.8	209	1,842.3	232	11,013	434	24
302	ASSOCIATED BRITISH FOODS[2]	BRITAIN	4,415.2	347.0	176	3,735.9	338	2,868.9	148	33,349	238	8
303	GLAXO HOLDINGS[1]	BRITAIN	4,408.3	1,180.1	37	5,373.5	247	3,548.8	121	37,547	207	19
304	OKI ELECTRIC INDUSTRY[2]	JAPAN	4,365.3[14]	118.8	358	4,391.8	296	1,115.4	342	18,440	370	7
305	TRELLEBORG	SWEDEN	4,351.6	286.9	204	4,801.6	279	783.7	405	26,384	284	4
306	BOISE CASCADE	U.S.	4,338.0	267.6	218	4,142.6	309	1,575.3	266	19,539	356	9
307	HOOGOVENS GROEP	NETHERLANDS	4,304.5	354.1**	174	4,976.9	267	1,360.1	295	26,913	279	15
308	STEEL AUTHORITY OF INDIA[2,3]	INDIA	4,304.0	209.1	273	5,151.7	258	2,721.5	159	197,799	18	15
309	NAVISTAR INTERNATIONAL[10]	U.S.	4,296.0	87.0	388	3,609.0	351	914.0	383	14,237	404	17
310	STC	BRITAIN	4,274.9	288.9	202	2,904.0	409	1,054.6	352	36,393	214	6
311	WARNER-LAMBERT	U.S.	4,272.0	412.7	148	2,859.8	413	1,129.8	337	33,000	240	19
312	L'ORÉAL	FRANCE	4,262.5	283.1	209	3,945.5	321	1,674.7	255	28,365	271	23
313	EATON	U.S.	4,240.9	224.9	255	3,051.6	402	1,144.7	333	43,048	181	17
314	RMC GROUP	BRITAIN	4,214.7	262.5**	222	2,621.6	427	958.5	376	25,709	293	4
315	HINO MOTORS[2]	JAPAN	4,203.3[8]	44.1[8]	434	2,115.8[8]	457	678.1[8]	426	8,053[8]	458	17
316	NIPPON SUISAN KAISHA[2]	JAPAN	4,181.2	21.1	461	2,303.4	450	618.6	433	5,168	483	8
317	ELI LILLY	U.S.	4,175.6	939.5	57	5,848.0	222	3,757.1	113	28,200	273	19
318	UNIGATE[2]	BRITAIN	4,165.8	230.6**	249	1,606.5	482	698.7	420	35,195	221	8
319	SHOWA DENKO	JAPAN	4,165.5	53.6	422	4,445.1	292	886.4	387	6,246	476	5
320	INLAND STEEL INDUSTRIES	U.S.	4,146.7	119.7	357	3,008.5	405	1,495.1	275	20,715	343	15
321	NIPPON LIGHT METAL[2]	JAPAN	4,134.1	114.3	361	3,542.7	359	245.3	482	10,700	436	14
322	YAMAHA MOTOR[2]	JAPAN	4,126.8	49.5	429	3,594.0	353	548.4	442	9,925	446	17
323	AJINOMOTO[2]	JAPAN	4,110.1	121.6	353	5,282.4	252	2,465.9	174	9,532	450	8
324	SULZER BROTHERS	SWITZERLAND	4,088.4	74.0	400	5,109.7	260	1,394.5	289	33,949	230	11
325	NOVA	CANADA	4,087.3[4]	157.1	320	6,823.8	193	2,083.8	205	12,730	420	5
326	JACOBS SUCHARD	SWITZERLAND	4,077.1	168.2	312	3,145.3	388	1,365.7	294	16,029	389	8
327	DE BEERS CONSOLIDATED MINES	SOUTH AFRICA	4,074.5	1,558.9	29	8,008.2	165	6,560.3	51	23,653	316	16
328	CRA	AUSTRALIA	4,026.7	514.0	120	6,336.5	205	3,186.5	137	21,185	339	16
329	WHITMAN	U.S.	4,023.8	190.7	285	3,717.6	341	894.1	385	25,188	301	8
330	DRESSER INDUSTRIES[10]	U.S.	4,022.9	170.0	311	3,056.1	401	1,608.2	262	31,400	251	11
331	JOHN LABATT[2]	CANADA	4,013.9	111.7	363	2,323.2	448	1,178.4	328	16,000	390	8
332	PETRO-CANADA[3]	CANADA	3,959.7	26.2‡	454	5,887.7	220	2,381.7	184	6,468	473	18
333	TOYOBO[2]	JAPAN	3,957.8	55.9	413	3,703.9	343	682.9	425	15,020	400	24
334	INCO	CANADA	3,948.0	753.4	76	3,665.5	345	1,289.3	309	19,337	360	16
335	SVENSKA CELLULOSA	SWEDEN	3,935.5	250.8	236	5,008.9	266	1,569.3	267	23,682	315	23
336	JUJO PAPER[2]	JAPAN	3,935.3[14]	122.9	351	4,308.4	301	982.4	369	6,743	471	9
337	SEAGRAM[3,5]	CANADA	3,934.7	589.5	101	9,696.5	131	4,974.3	77	16,200	387	3
338	AMAX	U.S.	3,915.0	360.4	168	4,190.0	307	2,040.9	209	20,000	349	15
339	MITSUBISHI OIL[2]	JAPAN	3,910.0	66.8	410	4,339.4	299	493.6	449	3,340	492	18
340	BOC GROUP[1]	BRITAIN	3,904.5	380.6	161	4,477.0	289	1,844.1	231	38,350	200	5
341	COCA-COLA ENTERPRISES	U.S.	3,888.5	71.7	404	4,731.9	283	1,680.1	253	20,000	351	3
342	SKF	SWEDEN	3,884.6	216.8	264	4,338.2	300	1,743.2	247	46,667	161	14
343	GREAT NORTHERN NEKOOSA	U.S.	3,863.1	321.1	187	4,115.4	313	1,803.5	236	19,500	357	9
344	GOLDSTAR	SOUTH KOREA	3,863.0	26.7	453	3,465.7	366	756.8	410	33,000	241	7
345	UNITED BRANDS[2,6]	U.S.	3,851.0	67.8	408	1,613.0	481	464.0	450	44,000	176	8
346	GILLETTE	U.S.	3,849.6	284.7	208	3,114.0	391	70.0	488	30,400	259	14
347	CEPSA (ESPAÑOLA DE PETRÓLEOS)	SPAIN	3,837.0	91.9	380	2,028.3	462	962.8	374	6,652	472	18
348	YAMAHA[2]	JAPAN	3,793.7	28.1‡	451	3,420.2	369	1,092.0	346	17,136	381	26
349	ORKEM[3]	FRANCE	3,756.1	358.9	170	3,777.6	335	1,297.9	306	13,196	414	5
350	EFIM[3]	ITALY	3,753.9[7]	(18.2)[7]	473	N.A.		985.8[7]	367	38,000	204	15

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1989			SALES	PROFITS		ASSETS		STOCKHOLDERS' EQUITY		EMPLOYEES		INDUSTRY TABLE NUMBER
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
351	MITSUI TOATSU CHEMICALS[2]	JAPAN	3,748.6	125.9	346	4,378.7	298	500.5	447	10,400	442	5
352	HINDUSTAN PETROLEUM[2,5]	INDIA	3,746.1	120.2	355	998.7	493	317.3	476	9,118	452	18
353	PACIFIC DUNLOP[1]	AUSTRALIA	3,719.1	(81.1)‡	482	3,109.2	392	826.2	397	44,753	171	17
354	KONICA[27]	JAPAN	3,715.6	15.4	464	3,912.8	325	1,300.5	305	21,430	336	22
355	CODELCO-CHILE[5]	CHILE	3,711.0	756.6	75	4,956.6	271	2,314.8	194	26,082	289	16
356	OWENS-ILLINOIS	U.S.	3,692.0	(108.1)	486	5,098.3	262	(97.7)	492	47,000	158	4
357	JOHNSON CONTROLS[1]	U.S.	3,689.6	97.5	374	2,415.0	444	977.9	371	42,600	182	10
358	ASAHI BREWERIES	JAPAN	3,661.5	27.3	452	8,186.1	163	1,777.1	241	6,923	467	3
359	AMERICAN STANDARD	U.S.	3,631.4	(46.2)	477	3,541.9	360	72.9	487	33,300	239	4
360	LEVI STRAUSS ASSOCIATES[13]	U.S.	3,627.9	272.3	215	2,020.0	463	394.5	465	31,000	254	2
361	LUCAS INDUSTRIES[22]	BRITAIN	3,565.7	235.1	246	2,986.8	407	1,342.3	301	55,957	128	17
362	GRUMMAN	U.S.	3,558.8	67.3	409	2,591.1	429	855.2	390	28,900	267	1
363	NOBEL INDUSTRIES	SWEDEN	3,556.1	213.9	270	4,580.8	286	779.5	407	22,246	327	5
364	PETRONAS[2,5]	MALAYSIA	3,533.0	252.6‡	232	8,481.3	158	4,659.5	83	7,562	463	18
365	GANNETT	U.S.	3,523.2	397.5	154	3,782.8	333	1,995.8	214	32,900	242	20
366	HAWKER SIDDELEY GROUP	BRITAIN	3,518.4	174.9‡	303	3,204.9	382	1,255.6	318	42,600	183	11
367	TIMES MIRROR	U.S.	3,517.5	298.0	196	3,947.5	320	1,877.2	225	29,066	266	20
368	CUMMINS ENGINE	U.S.	3,510.8	(6.1)	471	2,030.8	461	559.2	441	25,100	302	11
369	NISSHIN STEEL[7]	JAPAN	3,488.3	243.4	243	6,002.2	215	1,214.7	323	8,334	457	14
370	GUINNESS	BRITAIN	3,485.6	657.5‡	90	10,005.1	124	5,421.5	65	18,106	373	3
371	SUMITOMO RUBBER	JAPAN	3,481.4	48.0	430	3,108.2	393	348.8	472	20,000	352	21
372	MATRA	FRANCE	3,475.7	94.9	376	5,345.9	249	463.4	451	21,242	338	1
373	GKN	BRITAIN	3,467.1	200.4	281	2,844.7	414	1,073.8	350	35,900	217	17
374	FMC	U.S.	3,461.0	136.4	339	2,819.0	415	(70.6)	490	24,110	312	5
375	SNECMA[5]	FRANCE	3,459.1	46.2	432	4,967.8	269	735.4	414	25,851	291	1
376	SANYO-KOKUSAKU PULP[7]	JAPAN	3,455.0	83.1	393	3,192.1	385	854.3	391	7,719	462	9
377	TOYODA AUTOMATIC LOOM WORKS[7]	JAPAN	3,454.8[8]	99.9[8]	371	2,341.2[8]	447	1,173.4[8]	329	6,837[8]	469	17
378	INGERSOLL-RAND	U.S.	3,447.4	210.8	272	2,594.6	428	1,376.9	292	31,623	249	11
379	KF INDUSTRI	SWEDEN	3,423.4	22.9	458	2,322.7	449	373.9	470	13,695	408	18
380	AVON PRODUCTS	U.S.	3,395.9	54.6	419	2,098.0	458	228.3	483	28,400	269	23
381	HONSHU PAPER[7]	JAPAN	3,380.9	29.9	448	3,730.6	340	397.4	463	7,546	464	9
382	SANKYO[7]	JAPAN	3,376.0	107.9	365	3,065.9	398	1,329.3	302	5,979	479	19
383	PACCAR	U.S.	3,372.9	241.9	244	3,067.1	397	1,007.3	362	13,077	416	17
384	CMB PACKAGING[28]	FRANCE	3,344.1	177.5	299	4,421.6	293	1,564.8	268	33,698	234	14
385	DOFASCO	CANADA	3,328.8[4]	184.0	291	4,396.2	295	1,950.6	219	22,700	323	15
386	PIONEER ELECTRONIC[2]	JAPAN	3,327.7[7]	144.6[7]	332	2,434.6	443	1,415.4	288	12,919	418	7
387	PROCORDIA[5]	SWEDEN	3,293.3	221.6‡	258	3,135.3	389	1,325.1	303	27,844	275	19
388	INTEL	U.S.	3,280.7	391.0	156	3,994.0	318	2,548.8	168	22,200	328	7
389	INTERCO[19]	U.S.	3,277.8	70.1	406	1,775.3	477	(1,005.8)	496	46,900	160	10
390	DAIDO STEEL[7]	JAPAN	3,258.4	57.1	416	3,057.6	400	794.3	402	10,445	440	15
391	ZAHNRADFABRIK FRIEDRICHSHAFEN	W. GERMANY	3,254.4	38.4	441	2,366.3	445	374.1	469	34,559	226	17
392	TDK[2]	JAPAN	3,252.9[7]	164.8[7]	316	3,767.3	336	2,153.3	199	19,361	359	7
393	COOKSON GROUP	BRITAIN	3,245.5	172.2	306	2,443.7	441	886.4	388	16,305	386	15
394	SCHERING-PLOUGH	U.S.	3,243.0	471.3	128	3,613.5	350	1,955.4	218	21,300	337	19
395	AGWAY[1,29]	U.S.	3,234.8	N.A.		1,701.3	479	255.2	481	15,100	398	8
396	BLACK & DECKER[1,30]	U.S.	3,221.3	30.0	446	6,258.1	210	720.7	417	38,600	199	11
397	MITSUBISHI PETROCHEMICAL[2]	JAPAN	3,209.1[7]	203.8[7]	276	4,057.2	315	983.8	368	3,770	490	5
398	ITOHAM FOODS[2]	JAPAN	3,198.2[7]	53.9[7]	421	1,690.1	480	783.2	406	6,746	470	8
399	SHISEIDO[2]	JAPAN	3,190.5[7]	81.5[7]	395	3,954.7	319	1,865.6	227	19,000	365	23
400	SHIN-ETSU CHEMICAL[2]	JAPAN	3,183.3	216.3	265	3,528.5	363	1,244.9	319	10,419	441	5

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			SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES		INDUSTRY TABLE NUMBER
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
401	MASCO	U.S.	3,150.5	220.9	259	3,640.8	347	1,858.4	228	42,000	186	14
402	MEIJI MILK PRODUCTS[2]	JAPAN	3,145.7	24.2	456	1,313.2	487	393.7	466	7,500	465	8
403	HEINEKEN	NETHERLANDS	3,145.1[4]	153.5	325	3,731.9	339	1,546.8	272	29,127	265	3
404	R.R. DONNELLEY & SONS	U.S.	3,127.6	221.9	257	2,507.3	433	1,445.8	281	26,100	288	20
405	YAMAZAKI BAKING	JAPAN	3,125.0[4]	71.6	405	1,859.1	474	954.3	378	16,410	384	8
406	KERR-MCGEE	U.S.	3,122.0	156.0	323	3,332.0	374	1,476.0	278	7,942	460	18
407	HERCULES	U.S.	3,121.3	(81.3)	483	3,653.2	346	1,897.2	223	23,290	321	5
408	COATS VIYELLA	BRITAIN	3,121.2	131.8	343	2,679.6	423	1,213.5	325	63,598	111	24
409	SCHERING	W. GERMANY	3,107.5	119.7	356	3,639.9	348	1,346.4	300	25,332	299	19
410	SOURCE PERRIER	FRANCE	3,090.6	41.7‡	436	N.A.		N.A.		N.A.		3
411	ONODA CEMENT[2]	JAPAN	3,089.4	90.5	384	3,871.5	328	699.0	419	6,890	468	4
412	MAYTAG[3]	U.S.	3,088.8	131.5	344	2,436.3	442	938.2	382	26,019	290	7
413	VALEO	FRANCE	3,090.4	146.8	331	3,150.8	387	1,011.1	361	34,200	229	17
414	WANG LABORATORIES	U.S.	3,078.4	(424.3)	491	2,725.7	419	1,130.8	336	28,334	272	6
415	DASSAULT AVIATION[12]	FRANCE	3,062.0	91.4	381	6,078.2	212	592.5	437	15,572	394	1
416	HOLDERBANK FINANCIERE GLARIS	SWITZERLAND	3,041.3[4]	171.3	309	5,868.4	221	1,895.7	224	25,308	300	4
417	TOYO SASH	JAPAN	3,040.2[2]	165.9[2]	314	3,050.6	402	1,267.5	317	8,588	455	14
418	RANKS HOVIS MCDOUGALL[3]	BRITAIN	3,036.9	101.5‡	369	2,261.5	454	1,419.8	287	39,000	197	8
419	HONAM OIL REFINERY	SOUTH KOREA	3,029.9	39.5	439	1,913.1	468	385.1	468	2,048	494	18
420	UPJOHN	U.S.	3,001.2	176.0	300	3,246.9	380	1,736.1	249	20,100	348	19
421	SANDVIK	SWEDEN	3,001.0	404.6	153	3,637.3	349	1,590.1	265	26,779	280	14
422	OWENS-CORNING FIBERGLAS	U.S.	3,000.0	172.0	307	1,924.0	466	(435.0)	494	18,300	371	4
423	MO OCH DOMSJO	SWEDEN	2,992.4	159.5**	318	4,229.6	306	645.6	430	13,414	411	9
424	FARMLAND INDUSTRIES[2,13]	U.S.	2,976.9	N.A.		1,182.4	489	458.5	454	6,275	475	8
425	BORAL	AUSTRALIA	2,975.4	252.1	233	2,573.1	431	1,214.6	324	25,000	303	4
426	LVMH	FRANCE	2,972.6	460.0	131	5,480.6	242	2,448.7	176	13,732	407	3
427	COAL INDIA[2,3]	INDIA	2,963.2	(15.8)	472	5,675.3	226	1,745.4	246	670,440	2	16
428	PITNEY BOWES	U.S.	2,959.3	252.8	231	5,611.1	231	1,428.3	284	31,404	250	6
429	ALPS ELECTRIC[2]	JAPAN	2,955.2	42.0	435	2,917.4	408	993.0	366	14,157	405	7
430	CONTROL DATA	U.S.	2,952.1	(680.4)	495	1,860.7	473	411.5	460	18,000	374	6
431	REVLON GROUP	U.S.	2,941.8	52.8	424	3,543.1	358	794.2	403	34,800	224	23
432	UNIVERSAL	U.S.	2,920.3	54.0	420	1,062.1	491	386.4	467	20,000	350	25
433	OMRON[2,14]	JAPAN	2,903.3	147.8**	329	2,752.0	416	1,367.0	293	15,047	399	7
434	OERLIKON-BÜHRLE	SWITZERLAND	2,902.9	(25.2)	475	5,533.2	236	1,847.1	229	27,326	276	11
435	LINDE	W. GERMANY	2,899.3	95.6	375	2,665.6	424	1,042.1	354	25,679	294	11
436	SUMITOMO HEAVY INDUSTRIES	JAPAN	2,897.0	32.7	445	3,574.9	356	500.7	446	10,000	445	11
437	ULTRAMAR	BRITAIN	2,882.0	167.6	313	3,671.5	344	1,556.4	270	3,792	489	18
438	COMPAQ COMPUTER	U.S.	2,876.1	333.3	182	2,090.4	459	1,171.6	330	9,700	448	6
439	DEUTSCHE BABCOCK[3]	W. GERMANY	2,872.9	4.7	469	1,448.3	485	363.7	471	23,586	318	14
440	ARMSTRONG WORLD INDUSTRIES	U.S.	2,864.0	187.6	287	2,033.0	460	976.5	372	25,607	295	24
441	DAISHOWA PAPER[2]	JAPAN	2,857.5	62.6	412	4,930.7	272	446.3	456	7,741	461	9
442	ERCROS[2,15]	SPAIN	2,847.3	144.1**	333	3,103.7	394	1,118.9	341	17,300	378	5
443	NISSHIN FLOUR MILLING[2]	JAPAN	2,841.9	59.7	415	1,559.6	483	642.5	431	4,345	487	8
444	CSR[2]	AUSTRALIA	2,827.8	250.5	238	4,132.8	310	1,822.4	233	18,266	372	4
445	BRUNSWICK	U.S.	2,826.1	(71.3)	480	1,984.8	465	776.1	408	25,800	292	27
446	SAARBERGWERKE	W. GERMANY	2,821.4	14.6	466	2,690.8	422	348.6	473	24,073	314	16
447	AMP	U.S.	2,820.5	280.9	210	2,529.8	432	1,625.4	260	24,400	310	7
448	RACAL ELECTRONICS[2]	BRITAIN	2,811.1	701.5**	85	2,860.7	412	1,292.5	307	33,702	232	7
449	RAUMA-REPOLA	FINLAND	2,795.2	109.9	364	3,881.3	327	1,168.5	331	19,430	358	14
450	BHARAT PETROLEUM[2,3]	INDIA	2,792.6	72.5	403	1,057.7	492	277.4	479	10,578	437	18

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			SALES	PROFITS		ASSETS		STOCK-HOLDERS' EQUITY		EMPLOYEES		INDUSTRY TABLE NUMBER
			$ Millions	$ Millions	Rank	$ Millions	Rank	$ Millions	Rank	Number	Rank	
451	NISSAN SHATAI[2]	JAPAN	2,789.5[8]	17.1[8]	463	1,065.8[8]	490	459.9[8]	453	5,078[8]	485	17
452	PIONEER INTERNATIONAL[1]	AUSTRALIA	2,779.3	125.4	347	2,652.9	425	1,081.7	349	9,897	447	18
453	WHITBREAD[19]	BRITAIN	2,768.0	287.1	203	5,529.0	237	3,796.5	112	54,192	136	3
454	UNION CAMP	U.S.	2,761.3	299.4	194	3,417.3	370	1,755.3	243	18,646	367	9
455	ZAMBIA INDUSTRIAL & MINING[2,5]	ZAMBIA	2,755.8[7]	N.A.		N.A.		N.A.		N.A.		16
456	ETHYL	U.S.	2,754.9	231.3	248	5,631.7	229	901.3	384	5,500	481	5
457	ABITIBI-PRICE	CANADA	2,751.0	45.8	433	2,298.0	452	1,063.4	351	15,600	393	9
458	MOORE	CANADA	2,750.6	201.7	279	2,008.3	464	1,441.0	283	26,359	285	20
459	PENNZOIL	U.S.	2,750.0	103.5	367	4,882.0	274	1,282.0	311	10,700	435	18
460	REED INTERNATIONAL[2]	BRITAIN	2,749.3	881.0**	65	3,797.1	329	2,476.7	173	22,100	329	20
461	OUTOKUMPU[5]	FINLAND	2,743.0	180.0	295	3,258.9	379	1,021.1	358	15,880	392	15
462	PHELPS DODGE	U.S.	2,726.4	267.0	219	2,504.6	434	1,350.1	297	13,288	412	15
463	KYOCERA[7]	JAPAN	2,724.9	230.6	250	3,927.7	324	2,744.0	156	19,192	362	7
464	KLÖCKNER-WERKE[3]	W. GERMANY	2,713.2	(102.6)‡	485	2,738.9	418	275.9	480	30,096	260	15
465	MITSUBISHI MINING & CEMENT[2]	JAPAN	2,702.2	38.7	440	3,276.8	378	568.5	440	6,459	474	4
466	NIXDORF COMPUTER	W. GERMANY	2,687.5	(566.5)	493	2,489.7	435	994.3	364	28,525	268	6
467	AIR PRODUCTS & CHEMICALS[3]	U.S.	2,662.3	222.1	256	3,365.7	373	1,444.9	282	14,100	406	5
468	ROHM & HAAS	U.S.	2,661.0	176.0	302	2,455.0	440	1,311.0	304	13,040	417	5
469	TABACALERA[5]	SPAIN	2,653.5[8]	87.4[8]	387	1,538.0[8]	484	569.5[8]	439	8,378[8]	456	25
470	QUANTUM CHEMICAL	U.S.	2,636.5	247.4	239	3,003.8	406	(172.3)	493	10,000	444	5
471	SABIC[5]	SAUDI ARABIA	2,629.6	953.3	53	8,004.1	166	3,627.7	116	8,938	453	5
472	YOKOHAMA RUBBER	JAPAN	2,628.0	64.3	411	2,695.0	421	397.1	464	11,073	432	21
473	KYMMENE	FINLAND	2,626.4	241.7	245	5,107.7	261	2,151.8	200	16,132	388	9
474	KANTO AUTO WORKS[2]	JAPAN	2,617.5[8]	24.6[8]	455	782.8[8]	496	203.5[8]	485	5,877[8]	480	17
475	MORINAGA MILK INDUSTRY[2]	JAPAN	2,616.0	29.8	449	1,378.5	486	418.8	459	4,930	486	8
476	ZENITH ELECTRONICS	U.S.	2,610.7	(68.4)	479	918.3	495	398.2	462	32,000	247	7
477	UNITIKA[2]	JAPAN	2,608.2	28.7	450	2,468.9	437	206.0	484	6,208	477	24
478	ENTREPRISE MINIÈRE & CHIMIQUE[3]	FRANCE	2,607.4	41.2	437	2,301.5	451	298.3	478	13,139	415	5
479	ESSELTE	SWEDEN	2,605.4	53.1‡	423	2,199.9	455	322.2	475	19,552	355	6
480	PREMARK INTERNATIONAL	U.S.	2,600.6	78.4	397	1,757.2	478	800.6	401	24,700	306	21
481	RECKITT & COLMAN	BRITAIN	2,580.4	201.6‡	280	1,836.1	475	955.1	377	22,000	330	23
482	NATIONAL STEEL[3,6]	U.S.	2,576.6	83.2	392	1,806.6	476	733.0	415	12,000	425	15
483	DOOSAN	SOUTH KOREA	2,568.6	23.7	457	2,632.7	426	617.4	435	16,540	383	3
484	KEMIRA[5]	FINLAND	2,568.2	40.9	438	3,592.5	355	753.0	411	15,982	391	5
485	WEST POINT-PEPPERELL[3]	U.S.	2,567.7	(19.3)	474	3,505.0	365	1,643.0	257	N.A.		24
486	NIPPON SEIKO[7]	JAPAN	2,548.9[7]	86.1[7]	391	3,309.2	376	1,552.6	271	11,941	427	17
487	GOODMAN FIELDER WATTIE[1]	AUSTRALIA	2,544.8	258.7**	227	3,134.3	390	1,044.9	353	25,000	304	8
488	NISSAN DIESEL MOTOR[7]	JAPAN	2,544.7	14.7	465	2,463.0	438	401.3	461	5,105	484	17
489	VF	U.S.	2,540.0	176.0	301	1,889.8	470	819.8	398	45,000	170	2
490	TYSON FOODS[3]	U.S.	2,538.2	100.6	370	2,586.1	430	447.7	455	42,000	187	8
491	SSAB SVENSKT STÅL	SWEDEN	2,532.8	140.9	335	2,160.6	456	696.0	421	12,153	423	15
492	JOHNSON MATTHEY[2]	BRITAIN	2,531.3	113.5**	362	957.7	494	542.8	443	7,179	466	14
493	OLIN	U.S.	2,530.0	124.0	349	1,904.0	469	665.0	428	15,400	395	5
494	B.F. GOODRICH	U.S.	2,520.7	172.4	305	2,274.4	453	1,277.2	312	11,892	428	5
495	PARKER HANNIFIN[1]	U.S.	2,520.2	124.5	348	1,922.5	467	840.5	393	33,463	237	11
496	BURMAH OIL	BRITAIN	2,518.8	186.7**	289	1,888.0	471	945.9	381	11,388	429	18
497	ENSO-GUTZEIT[5]	FINLAND	2,505.7	203.1	277	4,494.6	288	1,462.6	279	17,915	375	9
498	MCDERMOTT INTERNATIONAL[2]	PANAMA	2,495.8	(91.7)	484	3,293.6	377	597.1	436	28,000	274	11
499	ARMCO	U.S.	2,494.4	165.0	315	2,489.1	436	1,026.8	355	10,500	438	15
500	DAF TRUCKS	NETHERLANDS	2,484.0	81.0	396	1,881.1	472	617.9	434	16,637	38217	
	TOTALS		4,591,153.5	214,639.9		4,868,881.1		1,520,913.0		26,638,437	–	

The definitions and concepts underlying the figures in this directory are explained on page 316. Footnotes appear on page 296.

THE MOST PROFITABLE, 1989

THE TEN HIGHEST RETURNS ON ASSETS

	SALES RANK	
VALE DO RIO DOCE	294	45.5%
PETRÓLEOS DE VENEZUELA	76	30.5
LYONDELL PETROCHEMICAL	246	29.5
RACAL ELECTRONICS	448	24.5
REED INTERNATIONAL	460	23.2
MERCK	193	22.1
GLAXO HOLDINGS	303	22.0
COCA-COLA	136	20.8
INCO	334	20.6
DE BEERS CONSOLIDATED MINES	327	19.5
THE 500 MEDIAN		4.3

THE TEN HIGHEST RETURNS ON SALES

VALE DO RIO DOCE	294	65.1%
DE BEERS CONSOLIDATED MINES	327	38.3
SABIC	471	36.3
REED INTERNATIONAL	460	32.0
GLAXO HOLDINGS	303	26.8
RACAL ELECTRONICS	448	25.0
OIL & NATURAL GAS COMMISSION	275	23.0
ELI LILLY	317	22.5
MERCK	193	22.3
CHINESE PETROLEUM	159	22.2
THE 500 MEDIAN		4.0

THE MOST PRODUCTIVE, 1989

THE TEN HIGHEST IN SALES PER EMPLOYEE

LYONDELL PETROCHEMICAL	246	$2,596,135
COSMO OIL	130	2,564,427
IDEMITSU KOSAN	99	2,125,712
NIPPON OIL	71	1,506,120
HONAM OIL REFINERY	419	1,479,446
MITSUBISHI OIL	339	1,170,668
TONEN	271	1,160,928
TAIYO FISHERY	151	1,042,326
TEXACO	23	874,525
MITSUBISHI PETROCHEM.	397	851,218

THE TEN HIGHEST IN SALES PER DOLLAR OF STOCKHOLDERS' EQUITY

LYONDELL PETROCHEMICAL	246	597.11%
GILLETTE	346	54.99
AMERICAN STANDARD	359	49.78
KANEBO	268	38.39
IDEMITSU KOSAN	99	34.36
TAIYO FISHERY	151	26.57
FRIED. KRUPP	133	20.32
COSMO OIL	130	18.82
NIPPON LIGHT METAL	321	16.85
SHOWA SHELL SEKIYU	152	16.50

THE FIVE LOWEST

VF	489	56,444
WHITBREAD	453	51,078
COATS VIYELLA	408	49,077
STEEL AUTHORITY OF INDIA	308	21,759
COAL INDIA	427	4,420
THE 500 MEDIAN		167,673

THE FIVE LOWEST

WHITBREAD	453	.73
SABIC	471	.72
GUINNESS	370	.64
PEMEX (PETRÓLEOS MEX.)	65	.63
DE BEERS CONSOL. MINES	327	.62
THE 500 MEDIAN		3.14

THE MONEY LOSERS

	SALES RANK	LOSS
RJR NABISCO HOLDINGS	66	$1,149.0
BOND CORP. HOLDINGS	228	799.8
CONTROL DATA	430	680.4
UNISYS	115	639.3
NIXDORF COMPUTER	466	566.5
SIDERBRAS	280	470.7*
WANG LABORATORIES	414	424.3
BRITISH COAL	169	359.0*
FRIED. KRUPP	133	272.3*
TIME WARNER	167	256.0
WICKES	277	122.5
OWENS-ILLINOIS	356	108.1*
KLÖCKNER-WERKE	464	102.6
MCDERMOTT INTERNATIONAL	498	91.7*
HERCULES	407	81.3
PACIFIC DUNLOP	353	81.1*
NORTHROP	256	80.5
BRUNSWICK	445	71.3
ZENITH ELECTRONICS	476	68.4
BORDEN	170	60.6
AMERICAN STANDARD	359	46.2*
BULL	257	41.8
OERLIKON-BÜHRLE	434	25.2
WEST POINT-PEPPERELL	485	19.3
EFIM	350	18.2
COAL INDIA	427	15.8*
CUMMINS ENGINE	368	6.1*

*Also lost money in 1988.

FOOTNOTES TO THE 500

** Reflects an extraordinary credit of at least 10%; see the explanations of "profits."
N.A. Not available.
‡ Reflects an extraordinary charge of at least 10%; see the explanations of "profits."

1

[1] Figures are for fiscal year ended June 30, 1989.
[2] Figures are for fiscal year ended March 31, 1989.
[3] Figures are for fiscal year ended September 30, 1989.
[4] Figure includes some significant subsidiaries owned 50% or less, either fully or on a prorated basis.
[5] Government owned.
[6] Figures include Sheller-Globe, acquired November 9, 1989.
[7] Figure is a FORTUNE estimate.
[8] Figures are unconsolidated.
[9] Name changed from RJR Nabisco.

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[10] Figures are for fiscal year ended October 31, 1989.
[11] Figures include Apollo, acquired May 18, 1989.
[12] Figures are for fiscal year ended May 31, 1989.
[13] Figures are for fiscal year ended November 30, 1989.
[14] Figure excludes some subsidiaries more than 50% owned.
[15] Figures include Squibb, acquired October 4, 1989.
[16] Name changed from Beecham Group upon merger with SmithKline Beckman.
[17] Figures include Warner Communications, acquired July 24, 1989.
[18] Figures are for fiscal year ended October 20, 1989.
[19] Figures are for fiscal year ended February 28, 1989.

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[20] Figures include A.H. Robins, acquired December 15, 1989.
[21] Figures are for fiscal year ended April 30, 1989.
[22] Figures are for fiscal year ended July 31, 1989.
[23] Figures include Champion Spark Plug, acquired March 23, 1989.
[24] Name changed from Toa Nenryo Kogyo KK.
[25] Figures are for fiscal year ended January 31, 1989.
[26] Owned by American Financial.
[27] Figures are for fiscal year ended April 20, 1989.
[28] Name changed from Carnaud.
[29] Cooperatives provide only net margin figures, which are not comparable to the profit figures on this list.

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[30] Figures include Emhart, acquired July 18, 1989.
[31] Figures include Chicago Pacific, acquired January 26, 1989.
[32] Name changed from Avions Marcel Dassault–Breguet Aviation.
[33] Figures are for fiscal year ended August 31, 1989.
[34] Name changed from Omron Tateisi Electronics.
[35] Name changed from Unión Explosivos Rio Tinto.
[36] Owned by National Intergroup.

THE 500 BY COUNTRY

	1-100	101-200	201-300	301-400	401-500	TOTAL	LARGEST COMPANY	SALES $ millions	RANK
AUSTRALIA	0	2	2	2	4	10	ELDERS IXL	10,338.7	112
BELGIUM	1	1	1	0	0	3	PETROFINA	11,269.7	98
BRAZIL	1	0	2	0	0	3	PETROBRÁS	16,359.9	58
BRITAIN	7	7	9	11	9	43	BRITISH PETROLEUM	49,484.4	10
BRITAIN/NETHERLANDS	2	0	0	0	0	2	ROYAL DUTCH/SHELL GROUP	85,527.9	4
CANADA	0	3	2	6	2	13	CANADIAN PACIFIC	9,306.3	134
CHILE	0	0	0	1	0	1	CODELCO-CHILE	3,711.0	355
FINLAND	0	1	1	0	5	7	NESTE	8,123.9	154
FRANCE	9	4	6	5	5	29	RENAULT	27,456.9	27
INDIA	0	1	1	2	2	6	INDIAN OIL	10,609.7	106
ITALY	5	1	0	1	0	7	IRI	49,077.2	11
ITALY/SWITZERLAND	0	1	0	0	0	1	PIRELLI	7,541.5	170
JAPAN	17	26	22	28	18	111	TOYOTA MOTOR	60,443.6	6
KUWAIT	1	0	0	0	0	1	KUWAIT PETROLEUM	11,796.5	92
LUXEMBOURG	0	0	1	0	0	1	ARBED	5,824.2	224
MALAYSIA	0	0	0	1	0	1	PETRONAS	3,533.0	364
MEXICO	1	0	0	0	0	1	PEMEX (PETRÓLEOS MEXICANOS)	15,257.8	65
NETHERLANDS	1	1	1	1	2	6	PHILIPS	24,992.5	29
NETHERLANDS ANTILLES	0	0	1	0	0	1	SCHLUMBERGER	4,843.7	273
NEW ZEALAND	0	1	0	0	0	1	FLETCHER CHALLENGE	6,571.7	199
NORWAY	0	2	0	0	0	2	NORSK HYDRO	9,599.0	129
PANAMA	0	0	0	0	1	1	MCDERMOTT INTERNATIONAL	2,495.8	498
SAUDI ARABIA	0	0	0	0	1	1	SABIC	2,629.6	471
SOUTH AFRICA	0	1	0	1	0	2	BARLOW RAND	10,417.7	108
SOUTH KOREA	2	2	4	1	2	11	SAMSUNG	35,189.1	20
SPAIN	1	1	0	1	2	5	INI	15,277.4	64
SWEDEN	2	2	1	6	4	15	VOLVO	14,637.7	70
SWITZERLAND	3	1	2	2	2	10	NESTLÉ	29,364.8	26
TAIWAN	0	1	0	0	0	1	CHINESE PETROLEUM	8,008.2	159
TURKEY	0	0	3	0	0	3	KOÇ HOLDING	6,414.9	203
UNITED STATES	35	34	34	30	34	167	GENERAL MOTORS	126,974.3	1
VENEZUELA	1	0	0	0	0	1	PETRÓLEOS DE VENEZUELA	13,677.3	76
WEST GERMANY	11	7	7	1	6	32	DAIMLER-BENZ	40,616.0	13
ZAMBIA	0	0	0	0	1	1	ZAMBIA INDUSTRIAL & MINING	2,755.8	455

THE TEN COUNTRIES WITH THE MOST COMPANIES AND THEIR TOP TEN	SALES $ millions	SALES Global 500 rank	PROFITS $ millions	PROFITS Global 500 rank
1 AUSTRALIA				
ELDERS IXL	10,338.7	112	513.8	121
BROKEN HILL PROPRIETARY	9,127.2	137	924.6	60
NEWS CORP.	6,453.0	202	949.5	55
BOND CORP. HOLDINGS	5,779.9	228	(799.8)	496
CRA	4,026.7	328	514.0	120
PACIFIC DUNLOP	3,719.1	353	(81.1)	482
BORAL	2,975.4	425	252.1	233
CSR	2,827.8	444	250.5	238
PIONEER INTERNATIONAL	2,779.3	452	125.4	347
GOODMAN FIELDER WATTIE	2,544.8	487	258.7	227
2 BRITAIN				
BRITISH PETROLEUM	49,484.4	10	3,498.8	8
BAT INDUSTRIES	23,528.9	36	2,123.2	17
IMPERIAL CHEMICAL IND.	21,889.4	40	1,733.0	23
BRITISH AEROSPACE	14,895.2	69	382.0	160
GRAND METROPOLITAN	14,274.6	73	1,805.9	21
HANSON	11,833.0	91	1,861.7	19
BTR	11,544.0	94	1,082.1	44
GEC (GENERAL ELECTRIC CO.)	10,396.0	111	923.9	61
RTZ	10,093.0	116	1,359.2	34
BRITISH STEEL	8,676.9	147	992.2	50
3 CANADA				
CANADIAN PACIFIC	9,306.3	134	629.3	97
ALCAN ALUMINIUM	8,839.0	141	835.0	69
NORANDA	7,802.1	163	373.3	167
NORTHERN TELECOM	6,105.5	216	376.5	164
THOMSON CORP.	5,112.0	264	929.0	59
NOVA	4,087.3	325	157.1	320
JOHN LABATT	4,013.9	331	111.7	363
PETRO-CANADA	3,959.7	332	26.2	454
INCO	3,948.0	334	753.4	76
SEAGRAM	3,934.7	337	589.5	101
4 FRANCE				
RENAULT	27,456.9	27	1,457.3	32
PEUGEOT	24,090.5	35	1,616.1	27
ELF AQUITAINE	23,501.4	37	1,132.4	39
CGE (CIE GENERALE D'ELECTRICITE)	22,575.0	39	774.5	72
TOTAL	16,926.8	55	346.1	177
USINOR-SACILOR	15,630.1	61	1,061.0	48
PECHINEY	13,986.8	75	523.5	115
THOMSON	12,027.1	86	78.0	398
RHONE-POULENC	11,463.1	95	642.0	95
SAINT-GOBAIN	10,403.1	110	676.3	88
5 JAPAN				
TOYOTA MOTOR	60,443.6	6	2,631.1	12
HITACHI	50,894.0	9	1,446.7	33
MATSUSHITA ELECTRIC INDUSTRIAL	43,086.0	12	1,664.0	26
NISSAN MOTOR	36,078.4	17	889.7	64
TOSHIBA	29,469.3	24	930.8	58
HONDA MOTOR	26,484.3	30	758.5	74
NEC	24,594.8	32	502.6	123
MITSUBISHI ELECTRIC	21,213.3	42	415.0	146
NIPPON STEEL	20,767.0	44	607.9	98
FUJITSU	18,734.1	49	541.1	110

THE TEN COUNTRIES WITH THE MOST COMPANIES AND THEIR TOP TEN	SALES $ millions	SALES Global 500 rank	PROFITS $ millions	PROFITS Global 500 rank
6 SOUTH KOREA				
SAMSUNG	35,189.1	20	515.1	119
DAEWOO	19,981.4	47	114.5	360
SUNKYONG	9,014.0	139	154.3	324
SSANGYONG	7,421.8	173	171.9	308
POHANG IRON & STEEL	6,471.9	201	214.3	269
HYUNDAI MOTOR	5,845.1	221	62.1	413
HYOSUNG	4,782.4	278	21.5	460
HYUNDAI HEAVY INDUSTRIES	4,428.9	300	94.3	377
GOLDSTAR	3,863.0	344	26.7	453
HONAM OIL REFINERY	3,029.9	419	39.5	439
7 SWEDEN				
VOLVO	14,637.7	70	836.9	68
ELECTROLUX	13,299.8	77	355.1	173
SAAB-SCANIA	7,219.0	181	156.4	322
STORA KOPPARBERGS BERGSLAGS	6,549.9	200	250.8	237
L.M. ERICSSON	6,249.6	212	327.0	185
TRELLEBORG	4,351.6	305	286.9	204
SVENSKA CELLULOSA	3,935.5	335	250.8	236
SKF	3,884.6	342	216.8	264
NOBEL INDUSTRIES	3,556.1	363	213.9	270
KF INDUSTRI	3,423.4	379	22.9	458
8 SWITZERLAND				
NESTLE	29,364.8	26	1,474.5	31
ASEA BROWN BOVERI	21,209.0	43	589.0	102
CIBA-GEIGY	12,597.9	81	951.8	54
SANDOZ	7,766.1	165	585.6	104
ROCHE/SAPAC	6,369.8	204	520.8	118
ALUSUISSE	4,567.1	291	284.9	207
SULZER BROTHERS	4,088.4	324	74.0	400
JACOBS SUCHARD	4,077.1	326	168.2	312
HOLDERBANK	3,041.3	416	171.3	309
OERLIKON-BÜHRLE	2,902.9	434	-25.2	475
9 UNITED STATES				
GENERAL MOTORS	126,974.3	1	4,224.3	2
FORD MOTOR	96,932.6	2	3,835.0	4
EXXON	86,656.0	3	3,510.0	7
INT'L BUSINESS MACHINES	63,438.0	5	3,758.0	5
GENERAL ELECTRIC	55,264.0	7	3,939.0	3
MOBIL	50,976.0	8	1,809.0	20
PHILIP MORRIS	39,069.0	14	2,946.0	9
CHRYSLER	36,156.0	16	359.0	169
E.I. DU PONT DE NEMOURS	35,209.0	19	2,480.0	14
TEXACO	32,416.0	23	2,413.0	15
10 WEST GERMANY				
DAIMLER-BENZ	40,616.0	13	3,584.6	6
VOLKSWAGEN	34,746.4	21	523.2	116
SIEMENS	32,659.6	22	786.8	71
BASF	25,317.0	31	1,071.3	47
HOECHST	24,403.0	33	1,025.6	49
BAYER	23,021.2	38	1,107.5	42
THYSSEN	18,298.9	51	408.0	151
ROBERT BOSCH	16,263.0	59	332.8	183
BMW	14,097.7	74	296.2	197
RUHRKOHLE	12,422.1	83	30.0	447

INDUSTRY TABLE NUMBER	COMPANY, COUNTRY, Global 500 Rank	RANKED WITHIN INDUSTRY: SALES $ mil.	Rank	PROFITS $ mil.	Rank	PROFITS AS A PERCENT OF SALES %	Rank	PROFITS AS A PERCENT OF ASSETS %	Rank
1 AEROSPACE 17 COMPANIES									
	BOEING, U.S., 45	**20,276**	1	**973**	1	**5**	4	**7**	4
	UNITED TECHNOLOGIES, U.S., 48	**19,766**	2	**702**	3	**4**	6	**5**	6
	MCDONNELL DOUGLAS, U.S., 68	**14,995**	3	**219**	10	**1**	13	**2**	12
	BRITISH AEROSPACE, BRITAIN, 69	**14,895**	4	**382**	5	**3**	11	**3**	9
	ROCKWELL INTERNATIONAL, U.S., 80	**12,633**	5	**735**	2	**6**	2	**8**	2
	ALLIED-SIGNAL, U.S., 87	**12,021**	6	**528**	4	**4**	5	**5**	5
	GENERAL DYNAMICS, U.S., 117	**10,053**	7	**293**	8	**3**	9	**4**	7
	LOCKHEED, U.S., 120	**9,932**	8	**2**	16	**0**	16	**0**	16
	TEXTRON, U.S., 172	**7,440**	9	**259**	9	**3**	7	**2**	10
	MARTIN MARIETTA, U.S., 226	**5,814**	10	**307**	7	**5**	3	**9**	1
	AEROSPATIALE, FRANCE, 232	**5,736**	11	**20**	15	**0**	15	**0**	15
	NORTHROP, U.S., 256	**5,200**	12	**(81)**	17	**(2)**	17	**(3)**	17
	ROLLS-ROYCE, BRITAIN, 272	**4,856**	13	**315**	6	**6**	1	**8**	3
	GRUMMAN, U.S., 362	**3,559**	14	**67**	13	**2**	12	**3**	8
	MATRA, FRANCE, 372	**3,476**	15	**95**	11	**3**	10	**2**	11
	SNECMA, FRANCE, 375	**3,459**	16	**46**	14	**1**	14	**1**	14
	DASSAULT AVIATION, FRANCE, 415	**3,062**	17	**91**	12	**3**	8	**2**	13
	TOTAL	**157,173**		**4,955**		–		–	
	MEDIAN	**7,440**		**259**		**3**		**3**	
2 APPAREL 2 COMPANIES									
	LEVI STRAUSS ASSOCIATES, U.S., 360	**3,628**	1	**272**	1	**8**	1	**13**	1
	VF, U.S., 489	**2,540**	2	**176**	2	**7**	2	**9**	2
	TOTAL	**6,168**		**448**		–		–	
3 BEVERAGES 17 COMPANIES									
	PEPSICO, U.S., 63	**15,420**	1	**901**	2	**6**	10	**6**	9
	ANHEUSER-BUSCH, U.S., 131	**9,481**	2	**767**	3	**8**	8	**9**	3
	COCA-COLA, U.S., 136	**9,171**	3	**1,724**	1	**19**	2	**21**	1
	ALLIED-LYONS, BRITAIN, 189	**6,871**	4	**601**	6	**9**	7	**6**	7
	BOND CORP. HOLDINGS, AUSTRALIA, 228	**5,780**	5	**(800)**	17	**(14)**	17	**(9)**	16
	BASS, BRITAIN, 238	**5,654**	6	**646**	5	**11**	5	**9**	2
	KIRIN BREWERY, JAPAN, 270	**4,971**	7	**220**	11	**4**	12	**3**	12
	CADBURY SCHWEPPES, BRITAIN, 285	**4,662**	8	**291**	9	**6**	9	**8**	4
	SEAGRAM, CANADA, 337	**3,935**	9	**589**	7	**15**	4	**6**	8
	COCA-COLA ENTERPRISES, U.S., 341	**3,889**	10	**72**	13	**2**	13	**2**	13
	ASAHI BREWERIES, JAPAN, 358	**3,662**	11	**27**	15	**1**	16	**0**	15
	GUINNESS, BRITAIN, 370	**3,486**	12	**657**	4	**19**	1	**7**	6
	HEINEKEN, NETHERLANDS, 403	**3,145**	13	**154**	12	**5**	11	**4**	11
	SOURCE PERRIER, FRANCE, 410	**3,091**	14	**42**	14	**1**	14	–	
	LVMH, FRANCE, 426	**2,973**	15	**460**	8	**15**	3	**8**	5
	WHITBREAD, BRITAIN, 453	**2,768**	16	**287**	10	**10**	6	**5**	10
	DOOSAN, SOUTH KOREA, 483	**2,569**	17	**24**	16	**1**	15	**1**	14
	TOTAL	**91,525**		**6,663**		–		–	
	MEDIAN	**3,935**		**291**		**6**		**6**	
4 BUILDING MATERIALS 16 COMPANIES									
	HANSON, BRITAIN, 91	**11,833**	1	**1,862**	1	**16**	1	**11**	2
	BTR, BRITAIN, 94	**11,544**	2	**1,082**	2	**9**	2	**11**	1
	SAINT-GOBAIN, FRANCE, 110	**10,403**	3	**676**	3	**7**	8	**5**	9
	LAFARGE COPPÉE, FRANCE, 279	**4,765**	4	**341**	4	**7**	5	**5**	10
	UBE INDUSTRIES, JAPAN, 292	**4,553**	5	**151**	12	**3**	12	**2**	12
	PILKINGTON, BRITAIN, 293	**4,550**	6	**312**	5	**7**	6	**7**	6
	TRELLEBORG, SWEDEN, 305	**4,352**	7	**287**	6	**7**	7	**6**	8
	RMC GROUP, BRITAIN, 314	**4,215**	8	**262**	7	**6**	9	**10**	3
	OWENS-ILLINOIS, U.S., 356	**3,692**	9	**(108)**	16	**(3)**	16	**(2)**	16
	AMERICAN STANDARD, U.S., 359	**3,631**	10	**(46)**	15	**(1)**	15	**(1)**	15
	ONODA CEMENT, JAPAN, 411	**3,089**	11	**91**	13	**3**	13	**2**	13
	HOLDERBANK, SWITZERLAND, 416	**3,041**	12	**171**	11	**6**	11	**3**	11
	OWENS-CORNING, U.S., 422	**3,000**	13	**172**	10	**6**	10	**9**	5
	BORAL, AUSTRALIA, 425	**2,975**	14	**252**	8	**8**	4	**10**	4
	CSR, AUSTRALIA, 444	**2,828**	15	**251**	9	**9**	3	**6**	7
	MITSUBISHI MINING & CEMENT, JAPAN, 465	**2,702**	16	**39**	14	**1**	14	**1**	14
	TOTAL	**81,174**		**5,795**		–		–	
	MEDIAN	**3,953**		**251**		**6**		**5**	
5 CHEMICALS 49 COMPANIES									
	E.I. DU PONT DE NEMOURS, U.S., 35	**35,209**	1	**2,480**	2	**7**	16	**7**	14
	BASF, W. GERMANY, 50	**25,317**	2	**1,071**	5	**4**	33	**5**	25

INDUSTRY TABLE NUMBER	COMPANY, COUNTRY	Global 500 Rank	RANKED WITHIN INDUSTRY: SALES $ mil.	SALES Rank	PROFITS $ mil.	PROFITS Rank	PROFITS AS A PERCENT OF SALES %	SALES Rank	PROFITS AS A PERCENT OF ASSETS %	ASSETS Rank
	HOECHST W. GERMANY	33	**24,403**	3	**1,026**	6	**4**	34	**5**	23
	BAYER W. GERMANY	38	**23,021**	4	**1,107**	4	**5**	31	**5**	24
	IMPERIAL CHEMICAL IND. BRITAIN	40	**21,889**	5	**1,733**	3	**8**	12	**10**	6
	DOW CHEMICAL U.S.	53	**17,730**	6	**2,487**	1	**14**	2	**11**	5
	CIBA-GEIGY SWITZERLAND	81	**12,598**	7	**952**	8	**8**	14	**6**	21
	RHÔNE-POULENC FRANCE	95	**11,463**	8	**642**	11	**6**	26	**4**	33
	ENIMONT ITALY	100	**11,191**	9	**522**	13	**5**	32	**4**	38
	NORSK HYDRO NORWAY	129	**9,599**	10	**389**	19	**4**	35	**3**	39
	AKZO NETHERLANDS	142	**8,838**	11	**450**	17	**5**	28	**6**	19
	UNION CARBIDE U.S.	144	**8,744**	12	**573**	12	**7**	22	**7**	15
	MONSANTO U.S.	146	**8,681**	13	**679**	9	**8**	13	**8**	11
	MITSUBISHI KASEI JAPAN	149	**8,649**	14	**157**	40	**2**	44	**1**	45
	ASAHI GLASS JAPAN	155	**8,088**	15	**427**	18	**5**	27	**5**	27
	SUMITOMO CHEMICAL JAPAN	186	**6,938**	16	**253**	27	**4**	40	**3**	40
	ROCHE/SAPAC SWITZERLAND	204	**6,370**	17	**521**	14	**8**	10	**5**	30
	W.R. GRACE U.S.	207	**6,331**	18	**253**	26	**4**	36	**5**	32
	HENKEL W. GERMANY	215	**6,188**	19	**215**	32	**3**	42	**4**	35
	PPG INDUSTRIES U.S.	223	**5,825**	20	**465**	15	**8**	11	**8**	9
	DAINIPPON INK & CHEMICALS JAPAN	242	**5,586**	21	**56**	45	**1**	48	**1**	48
	LYONDELL PETROCHEM. U.S.	246	**5,374**	22	**374**	21	**7**	17	**30**	1
	CEA-INDUSTRIE FRANCE	252	**5,256**	23	**345**	23	**7**	21	**2**	43
	DSM NETHERLANDS	266	**5,081**	24	**651**	10	**13**	3	**13**	3
	SEKISUI CHEMICAL JAPAN	269	**5,034**	25	**178**	36	**4**	41	**4**	36
	AMERICAN CYANAMID U.S.	274	**4,825**	26	**292**	25	**6**	24	**6**	20
	HÜLS W. GERMANY	281	**4,750**	27	**181**	35	**4**	39	**4**	34
	COURTAULDS BRITAIN	289	**4,615**	28	**454**	16	**10**	4	**15**	2
	L'AIR LIQUIDE FRANCE	297	**4,483**	29	**334**	24	**7**	15	**6**	22
	SHOWA DENKO JAPAN	319	**4,166**	30	**54**	46	**1**	47	**1**	46
	NOVA CANADA	325	**4,087**	31	**157**	39	**4**	38	**2**	42
	BOC GROUP BRITAIN	340	**3,904**	32	**381**	20	**10**	5	**9**	8
	ORKEM FRANCE	349	**3,756**	33	**359**	22	**10**	6	**10**	7
	MITSUI TOATSU CHEMICALS JAPAN	351	**3,749**	34	**126**	43	**3**	43	**3**	41
	NOBEL INDUSTRIES SWEDEN	363	**3,556**	35	**214**	33	**6**	25	**5**	29
	FMC U.S.	374	**3,461**	36	**136**	42	**4**	37	**5**	28
	MITSUBISHI PETROCHEMICAL JAPAN	397	**3,209**	37	**204**	34	**6**	23	**5**	26
	SHIN-ETSU CHEMICAL JAPAN	400	**3,183**	38	**216**	31	**7**	19	**6**	18
	HERCULES U.S.	407	**3,121**	39	**(81)**	49	**(3)**	49	**(2)**	49
	ERCROS SPAIN	442	**2,847**	40	**144**	41	**5**	29	**5**	31
	ETHYL U.S.	456	**2,755**	41	**231**	29	**8**	8	**4**	37
	AIR PROD. & CHEM. U.S.	467	**2,662**	42	**222**	30	**8**	9	**7**	16
	ROHM & HAAS U.S.	468	**2,661**	43	**176**	37	**7**	20	**7**	13
	QUANTUM CHEMICAL U.S.	470	**2,637**	44	**247**	28	**9**	7	**8**	10
	SABIC SAUDI ARABIA	471	**2,630**	45	**953**	7	**36**	1	**12**	4
	ENTREPRISE MINIÈRE & CHIMIQUE FRANCE	478	**2,607**	46	**41**	47	**2**	46	**2**	44
	KEMIRA FINLAND	484	**2,568**	47	**41**	48	**2**	45	**1**	47
	OLIN U.S.	493	**2,530**	48	**124**	44	**5**	30	**7**	17
	B.F. GOODRICH U.S.	494	**2,521**	49	**172**	38	**7**	18	**8**	12
	TOTAL		**374,688**		**23,385**		**–**		**–**	
	MEDIAN		**5,034**		**292**		**6**		**5**	
6	**COMPUTERS (INCL. OFFICE EQUIPMENT)** 18 COMPANIES									
	IBM U.S.	5	**63,438**	1	**3,758**	1	**6**	8	**5**	7
	FUJITSU JAPAN	49	**18,734**	2	**541**	4	**3**	9	**3**	9
	DIGITAL EQUIPMENT U.S.	78	**12,866**	3	**1,073**	2	**8**	4	**10**	3
	HEWLETT-PACKARD U.S.	89	**11,899**	4	**829**	3	**7**	5	**8**	6
	UNISYS U.S.	115	**10,097**	5	**(639)**	17	**(6)**	15	**(6)**	15
	CANON JAPAN	118	**10,024**	6	**278**	9	**3**	10	**2**	11
	OLIVETTI ITALY	198	**6,586**	7	**148**	11	**2**	12	**1**	13
	NCR U.S.	218	**5,956**	8	**412**	6	**7**	6	**9**	5
	RICOH JAPAN	229	**5,780**	9	**139**	12	**2**	11	**3**	10
	APPLE COMPUTER U.S.	251	**5,284**	10	**454**	5	**9**	2	**17**	1
	BULL FRANCE	257	**5,192**	11	**(42)**	14	**(1)**	14	**(1)**	14
	STC BRITAIN	310	**4,275**	12	**289**	8	**7**	7	**10**	4
	WANG LABORATORIES U.S.	414	**3,078**	13	**(424)**	15	**(14)**	16	**(16)**	16
	PITNEY BOWES U.S.	428	**2,959**	14	**253**	10	**9**	3	**5**	8
	CONTROL DATA U.S.	430	**2,952**	15	**(680)**	18	**(23)**	18	**(37)**	18
	COMPAQ COMPUTER U.S.	438	**2,876**	16	**333**	7	**12**	1	**16**	2
	NIXDORF COMPUTER W. GERMANY	466	**2,688**	17	**(566)**	16	**(21)**	17	**(23)**	17
	ESSELTE SWEDEN	479	**2,605**	18	**53**	13	**2**	13	**2**	12
	TOTAL		**177,288**		**6,207**		**–**		**–**	
	MEDIAN		**5,532**		**265**		**3**		**3**	

INDUSTRY TABLE NUMBER	COMPANY COUNTRY Global 500 Rank	RANKED WITHIN INDUSTRY SALES $ mil.	Rank	PROFITS $ mil.	Rank	PROFITS AS A PERCENT OF SALES %	Rank	ASSETS %	Rank
7	**ELECTRONICS** 46 COMPANIES								
	GENERAL ELECTRIC U.S. 7	**55,264**	1	**3,939**	1	**7**	9	**3**	27
	HITACHI JAPAN 9	**50,894**	2	**1,447**	3	**3**	29	**3**	29
	MATSUSHITA ELEC. INDUSTRIAL JAPAN 12	**43,086**	3	**1,664**	2	**4**	22	**3**	23
	SAMSUNG SOUTH KOREA 20	**35,189**	4	**515**	15	**1**	38	**2**	36
	SIEMENS W. GERMANY 22	**32,660**	5	**787**	7	**2**	32	**2**	32
	TOSHIBA JAPAN 24	**29,469**	6	**931**	4	**3**	27	**3**	28
	PHILIPS NETHERLANDS 29	**26,992**	7	**648**	10	**2**	33	**2**	33
	NEC JAPAN 32	**24,595**	8	**503**	16	**2**	35	**2**	35
	CGE (CIE GÉNÉRALE D'ÉLECTRICITÉ) FRANCE 39	**22,575**	9	**775**	8	**3**	25	**2**	31
	MITSUBISHI ELECTRIC JAPAN 42	**21,213**	10	**415**	18	**2**	36	**2**	34
	DAEWOO SOUTH KOREA 47	**19,981**	11	**115**	40	**1**	45	**0**	45
	SONY JAPAN 57	**16,680**	12	**564**	13	**3**	26	**3**	26
	ELECTROLUX SWEDEN 77	**13,300**	13	**355**	21	**3**	31	**3**	25
	WESTINGHOUSE ELECTRIC U.S. 79	**12,844**	14	**922**	6	**7**	8	**5**	19
	THOMSON FRANCE 86	**12,027**	15	**78**	41	**1**	44	**0**	44
	SANYO ELECTRIC JAPAN 107	**10,487**	16	**124**	38	**1**	41	**1**	41
	GEC (GENERAL ELECTRIC CO.) BRITAIN 111	**10,396**	17	**924**	5	**9**	4	**10**	7
	SHARP JAPAN 121	**9,928**	18	**226**	30	**2**	34	**2**	38
	MOTOROLA U.S. 128	**9,620**	19	**498**	17	**5**	16	**6**	10
	RAYTHEON U.S. 143	**8,796**	20	**529**	14	**6**	11	**10**	5
	TRW U.S. 174	**7,408**	21	**263**	27	**4**	23	**5**	17
	HONEYWELL U.S. 179	**7,242**	22	**604**	11	**8**	6	**11**	2
	SCHNEIDER FRANCE 184	**7,080**	23	**138**	36	**2**	37	**2**	37
	EMERSON ELECTRIC U.S. 185	**7,071**	24	**588**	12	**8**	7	**11**	4
	TEXAS INSTRUMENTS U.S. 197	**6,592**	25	**292**	24	**4**	19	**6**	11
	WHIRLPOOL U.S. 208	**6,319**	26	**187**	31	**3**	28	**3**	22
	L.M. ERICSSON SWEDEN 212	**6,250**	27	**327**	22	**5**	14	**5**	18
	NORTHERN TELECOM CANADA 216	**6,106**	28	**377**	20	**6**	10	**6**	13
	THORN EMI BRITAIN 225	**5,820**	29	**307**	23	**5**	13	**8**	8
	FUJI ELECTRIC JAPAN 247	**5,369**	30	**73**	42	**1**	40	**1**	40
	NOKIA FINLAND 249	**5,308**	31	**36**	44	**1**	43	**1**	43
	LITTON INDUSTRIES U.S. 261	**5,130**	32	**178**	32	**3**	24	**3**	24
	COOPER INDUSTRIES U.S. 262	**5,129**	33	**268**	26	**5**	15	**4**	21
	TELEDYNE U.S. 284	**4,664**	34	**259**	28	**6**	12	**8**	9
	OKI ELECTRIC INDUSTRY JAPAN 304	**4,365**	35	**119**	39	**3**	30	**3**	30
	GOLDSTAR SOUTH KOREA 344	**3,863**	36	**27**	45	**1**	42	**1**	42
	PIONEER ELECTRONIC JAPAN 386	**3,328**	37	**145**	35	**4**	20	**6**	12
	INTEL U.S. 388	**3,281**	38	**391**	19	**12**	2	**10**	6
	TDK JAPAN 392	**3,253**	39	**165**	33	**5**	18	**4**	20
	MAYTAG U.S. 412	**3,089**	40	**131**	37	**4**	21	**5**	15
	ALPS ELECTRIC JAPAN 429	**2,955**	41	**42**	43	**1**	39	**1**	39
	OMRON JAPAN 433	**2,903**	42	**148**	34	**5**	17	**5**	16
	AMP U.S. 447	**2,821**	43	**281**	25	**10**	3	**11**	3
	RACAL ELECTRONICS BRITAIN 448	**2,811**	44	**701**	9	**25**	1	**25**	1
	KYOCERA JAPAN 463	**2,725**	45	**231**	29	**8**	5	**6**	14
	ZENITH ELECTRONICS U.S. 476	**2,611**	46	**(68)**	46	**(3)**	46	**(7)**	46
	TOTAL	**589,489**		**22,165**		–		–	
	MEDIAN	**7,075**		**299**		**4**		**3**	
8	**FOOD** 46 COMPANIES								
	PHILIP MORRIS U.S. 14	**39,069**	1	**2,946**	1	**8**	6	**8**	14
	UNILEVER BRITAIN/NETHERLANDS 18	**35,284**	2	**1,730**	3	**5**	16	**8**	12
	NESTLÉ SWITZERLAND 26	**29,365**	3	**1,474**	4	**5**	14	**6**	16
	OCCIDENTAL PETROLEUM U.S. 46	**20,068**	4	**285**	17	**1**	36	**1**	39
	RJR NABISCO HOLDINGS U.S. 66	**15,224**	5	**(1,149)**	44	**(8)**	44	**(3)**	44
	GRAND METROPOLITAN BRITAIN 73	**14,275**	6	**1,806**	2	**13**	1	**12**	4
	FERRUZZI FINANZIARIA ITALY 85	**12,047**	7	**227**	21	**2**	31	**1**	41
	SARA LEE U.S. 93	**11,738**	8	**410**	12	**3**	22	**6**	18
	CONAGRA U.S. 97	**11,340**	9	**198**	23	**2**	33	**5**	25
	BARLOW RAND SOUTH AFRICA 108	**10,418**	10	**358**	13	**3**	23	**6**	20
	ELDERS IXL AUSTRALIA 112	**10,339**	11	**514**	5	**5**	15	**7**	15
	TAIYO FISHERY JAPAN 151	**8,326**	12	**60**	35	**1**	39	**2**	37
	DALGETY BRITAIN 153	**8,160**	13	**116**	28	**1**	35	**5**	23
	ARCHER-DANIELS-MIDLAND U.S. 156	**8,057**	14	**425**	8	**5**	13	**9**	8
	BSN FRANCE 166	**7,739**	15	**423**	9	**5**	12	**4**	27
	BORDEN U.S. 169	**7,593**	16	**(61)**	43	**(1)**	43	**(1)**	43
	SNOW BRAND MILK PRODUCTS JAPAN 183	**7,188**	17	**52**	38	**1**	40	**2**	38
	RALSTON PURINA U.S. 192	**6,712**	18	**423**	10	**6**	10	**10**	6
	HILLSDOWN HOLDINGS BRITAIN 217	**6,047**	19	**247**	19	**4**	19	**9**	10

INDUSTRY TABLE NUMBER	COMPANY, COUNTRY, Global 500 Rank	RANKED WITHIN INDUSTRY: SALES $ mil.	Rank	PROFITS $ mil.	Rank	PROFITS AS A PERCENT OF SALES %	Rank	ASSETS %	Rank
	H.J. HEINZ U.S. 222	**5,832**	20	**440**	7	**8**	5	**11**	5
	GENERAL MILLS U.S. 227	**5,798**	21	**414**	11	**7**	8	**14**	2
	QUAKER OATS U.S. 233	**5,724**	22	**203**	22	**4**	21	**6**	17
	CAMPBELL SOUP U.S. 235	**5,710**	23	**13**	42	**0**	42	**0**	42
	TATE & LYLE BRITAIN 236	**5,681**	24	**191**	24	**3**	24	**6**	19
	CPC INTERNATIONAL U.S. 263	**5,129**	25	**328**	15	**6**	9	**9**	9
	KELLOGG U.S. 283	**4,666**	26	**470**	6	**10**	3	**14**	3
	NIPPON MEAT PACKERS JAPAN 287	**4,640**	27	**90**	32	**2**	30	**3**	32
	BEATRICE U.S. 295	**4,498**	28	**325**	16	**7**	7	**9**	11
	ASSOCIATED BRITISH FOODS BRITAIN 302	**4,415**	29	**347**	14	**8**	4	**9**	7
	NIPPON SUISAN KAISHA JAPAN 316	**4,181**	30	**21**	41	**1**	41	**1**	40
	UNIGATE BRITAIN 318	**4,166**	31	**231**	20	**6**	11	**14**	1
	AJINOMOTO JAPAN 323	**4,110**	32	**122**	27	**3**	26	**2**	34
	JACOBS SUCHARD SWITZERLAND 326	**4,077**	33	**168**	26	**4**	18	**5**	21
	WHITMAN U.S. 329	**4,024**	34	**191**	25	**5**	17	**5**	22
	JOHN LABATT CANADA 331	**4,014**	35	**112**	29	**3**	27	**5**	24
	UNITED BRANDS U.S. 345	**3,851**	36	**68**	34	**2**	32	**4**	28
	AGWAY U.S. 395	**3,235**	37	–				–	
	ITOHAM FOODS JAPAN 398	**3,198**	38	**54**	37	**2**	34	**3**	33
	MEIJI MILK PRODUCTS JAPAN 402	**3,146**	39	**24**	40	**1**	38	**2**	36
	YAMAZAKI BAKING JAPAN 405	**3,125**	40	**72**	33	**2**	28	**4**	30
	RANKS HOVIS MCDOUGALL BRITAIN 418	**3,037**	41	**102**	30	**3**	25	**4**	26
	FARMLAND INDUSTRIES U.S. 424	**2,977**	42	–				–	
	NISSHIN FLOUR MILLING JAPAN 443	**2,842**	43	**60**	36	**2**	29	**4**	31
	MORINAGA MILK INDUSTRY JAPAN 475	**2,616**	44	**30**	39	**1**	37	**2**	35
	GOODMAN FIELDER WATTIE AUSTRALIA 487	**2,545**	45	**259**	18	**10**	2	**8**	13
	TYSON FOODS U.S. 490	**2,538**	46	**101**	31	**4**	20	**4**	29
	TOTAL	**378,764**		**14,917**		–		–	
	MEDIAN	**5,696**		**200**		**3**		**5**	

9 FOREST PRODUCTS 26 COMPANIES

	INTERNATIONAL PAPER U.S. 96	**11,378**	1	**864**	1	**8**	6	**7**	5
	GEORGIA-PACIFIC U.S. 113	**10,171**	2	**661**	2	**6**	10	**9**	1
	WEYERHAEUSER U.S. 114	**10,106**	3	**341**	9	**3**	20	**2**	22
	CANADIAN PACIFIC CANADA 134	**9,306**	4	**629**	3	**7**	9	**4**	16
	NORANDA CANADA 163	**7,802**	5	**373**	8	**5**	15	**3**	18
	FLETCHER CHALLENGE NEW ZEALAND 199	**6,572**	6	**407**	6	**6**	11	**5**	10
	STORA KOPPARBERGS BERGSLAGS SWEDEN 200	**6,550**	7	**251**	15	**4**	19	**3**	20
	JAMES RIVER (VA.) U.S. 220	**5,902**	8	**255**	14	**4**	18	**5**	12
	KIMBERLY-CLARK U.S. 230	**5,777**	9	**424**	5	**7**	8	**9**	3
	STONE CONTAINER U.S. 248	**5,361**	10	**286**	12	**5**	13	**5**	13
	CHAMPION INTERNATIONAL U.S. 253	**5,254**	11	**432**	4	**8**	4	**6**	9
	FELDMÜHLE NOBEL W. GERMANY 255	**5,224**	12	**86**	22	**2**	25	**2**	23
	SCOTT PAPER U.S. 267	**5,066**	13	**376**	7	**7**	7	**7**	6
	OJI PAPER JAPAN 282	**4,709**	14	**207**	18	**4**	17	**4**	15
	MEAD U.S. 286	**4,647**	15	**216**	17	**5**	16	**6**	8
	BOISE CASCADE U.S. 306	**4,338**	16	**268**	13	**6**	12	**6**	7
	JUJO PAPER JAPAN 336	**3,935**	17	**123**	21	**3**	21	**3**	19
	GREAT NORTHERN NEKOOSA U.S. 343	**3,863**	18	**321**	10	**8**	3	**8**	4
	SANYO-KOKUSAKU PULP JAPAN 376	**3,455**	19	**83**	23	**2**	22	**3**	21
	HONSHU PAPER JAPAN 381	**3,381**	20	**30**	26	**1**	26	**1**	26
	MO OCH DOMSJO SWEDEN 423	**2,992**	21	**159**	20	**5**	14	**4**	17
	DAISHOWA PAPER MFG. JAPAN 441	**2,858**	22	**63**	24	**2**	23	**1**	25
	UNION CAMP U.S. 454	**2,761**	23	**299**	11	**11**	1	**9**	2
	ABITIBI-PRICE CANADA 457	**2,751**	24	**46**	25	**2**	24	**2**	24
	KYMMENE FINLAND 473	**2,626**	25	**242**	16	**9**	2	**5**	11
	ENSO-GUTZEIT FINLAND 497	**2,506**	26	**203**	19	**8**	5	**5**	14
	TOTAL	**139,290**		**7,645**		–		–	
	MEDIAN	**4,887**		**261**		**5**		**5**	

10 FURNITURE 2 COMPANIES

	JOHNSON CONTROLS U.S. 357	**3,690**	1	**98**	1	**3**	1	**4**	1
	INTERCO U.S. 389	**3,278**	2	**70**	2	**2**	2	**4**	2
	TOTAL	**6,967**		**168**		–		–	

11 INDUSTRIAL AND FARM EQUIPMENT 24 COMPANIES

	ASEA BROWN BOVERI SWITZERLAND 43	**21,209**	1	**589**	1	**3**	11	**2**	11
	MITSUBISHI HEAVY INDUSTRIES JAPAN 67	**15,007**	2	**482**	4	**3**	10	**2**	13
	TENNECO U.S. 72	**14,439**	3	**584**	2	**4**	7	**3**	9
	MANNESMANN W. GERMANY 90	**11,872**	4	**246**	6	**2**	14	**3**	10

INDUSTRY TABLE NUMBER	COMPANY COUNTRY Global 500 Rank	RANKED WITHIN INDUSTRY SALES $ mil.	Rank	PROFITS $ mil.	Rank	PROFITS AS A PERCENT OF SALES %	Rank	ASSETS %	Rank
	CATERPILLAR U.S. 102	**11,126**	5	**497**	3	**4**	5	**5**	5
	FRIED. KRUPP W. GERMANY 133	**9,402**	6	**(272)**	24	**(3)**	23	**(5)**	24
	MAN W. GERMANY 135	**9,177**	7	**128**	13	**1**	17	**2**	15
	DEERE U.S. 180	**7,221**	8	**380**	5	**5**	2	**4**	6
	MATSUSHITA ELECTRIC WORKS JAPAN 196	**6,657**	9	**231**	7	**3**	8	**4**	7
	KOMATSU JAPAN 206	**6,349**	10	**162**	11	**3**	12	**2**	14
	ISHIKAWAJIMA-HARIMA HVY. IND. JAPAN 209	**6,290**	11	**103**	15	**2**	16	**1**	17
	HOESCH W. GERMANY 237	**5,678**	12	**38**	18	**1**	20	**1**	19
	KUBOTA JAPAN 240	**5,623**	13	**144**	12	**3**	13	**2**	12
	SULZER BROTHERS SWITZERLAND 324	**4,088**	14	**74**	17	**2**	15	**1**	16
	DRESSER INDUSTRIES U.S. 330	**4,023**	15	**170**	10	**4**	6	**6**	3
	HAWKER SIDDELEY GROUP BRITAIN 366	**3,518**	16	**175**	9	**5**	3	**5**	4
	CUMMINS ENGINE U.S. 368	**3,511**	17	**(6)**	21	**0**	21	**0**	21
	INGERSOLL-RAND U.S. 378	**3,447**	18	**211**	8	**6**	1	**8**	1
	BLACK & DECKER U.S. 396	**3,221**	19	**30**	20	**1**	19	**0**	20
	OERLIKON-BÜHRLE SWITZERLAND 434	**2,903**	20	**(25)**	22	**(1)**	22	**0**	22
	LINDE W. GERMANY 435	**2,899**	21	**96**	16	**3**	9	**4**	8
	SUMITOMO HEAVY INDUSTRIES JAPAN 436	**2,897**	22	**33**	19	**1**	18	**1**	18
	PARKER HANNIFIN U.S. 495	**2,520**	23	**124**	14	**5**	4	**6**	2
	MCDERMOTT INTERNATIONAL PANAMA 498	**2,496**	24	**(92)**	23	**(4)**	24	**(3)**	23
	TOTAL	**165,575**		**4,103**		–		–	
	MEDIAN	**5,650**		**136**		**3**		**2**	

12 JEWELRY, SILVERWARE N.A.

13 LEATHER N.A.

14 METAL PRODUCTS 18 COMPANIES

	NKK JAPAN 104	**10,926**	1	**714**	2	**7**	6	**4**	13
	ALCAN ALUMINIUM CANADA 141	**8,839**	2	**835**	1	**9**	2	**9**	4
	SUMITOMO ELECTRIC INDUSTRIES JAPAN 188	**6,878**	3	**179**	11	**3**	16	**3**	15
	BICC BRITAIN 213	**6,217**	4	**190**	9	**3**	14	**6**	6
	FURUKAWA ELECTRIC JAPAN 239	**5,651**	5	**91**	17	**2**	17	**2**	17
	TOYO SEIKAN JAPAN 254	**5,242**	6	**180**	10	**3**	13	**5**	10
	ALUSUISSE SWITZERLAND 291	**4,567**	7	**285**	4	**6**	7	**7**	5
	NIPPON LIGHT METAL JAPAN 321	**4,134**	8	**114**	14	**3**	15	**3**	14
	SKF SWEDEN 342	**3,885**	9	**217**	8	**6**	8	**5**	9
	GILLETTE U.S. 346	**3,850**	10	**285**	5	**7**	3	**9**	3
	NISSHIN STEEL JAPAN 369	**3,488**	11	**243**	6	**7**	5	**4**	11
	CMB PACKAGING FRANCE 384	**3,344**	12	**178**	12	**5**	10	**4**	12
	MASCO U.S. 401	**3,151**	13	**221**	7	**7**	4	**6**	7
	TOYO SASH JAPAN 417	**3,040**	14	**166**	13	**5**	9	**5**	8
	SANDVIK SWEDEN 421	**3,001**	15	**405**	3	**13**	1	**11**	2
	DEUTSCHE BABCOCK W. GERMANY 439	**2,873**	16	**5**	18	**0**	18	**0**	18
	RAUMA-REPOLA FINLAND 449	**2,795**	17	**110**	16	**4**	12	**3**	16
	JOHNSON MATTHEY BRITAIN 492	**2,531**	18	**114**	15	**4**	11	**12**	1
	TOTAL	**84,412**		**4,531**		–		–	
	MEDIAN	**3,867**		**185**		**5**		**5**	

15 METALS 38 COMPANIES

	IRI ITALY 11	**49,077**	1	**1,178**	1	**2**	27	–	
	NIPPON STEEL JAPAN 44	**20,767**	2	**608**	6	**3**	25	**2**	27
	THYSSEN W. GERMANY 51	**18,299**	3	**408**	10	**2**	29	**4**	23
	USINOR-SACILOR FRANCE 61	**15,630**	4	**1,061**	2	**7**	9	**6**	11
	PECHINEY FRANCE 75	**13,987**	5	**524**	8	**4**	21	**4**	21
	ALUMINUM CO. OF AMERICA U.S. 101	**11,162**	6	**945**	4	**8**	6	**8**	5
	METALLGESELLSCHAFT W. GERMANY 105	**10,753**	7	**76**	34	**1**	35	**2**	33
	KOBE STEEL JAPAN 123	**9,886**	8	**198**	21	**2**	30	**1**	34
	SUMITOMO METAL INDUSTRIES JAPAN 127	**9,643**	9	**452**	9	**5**	16	**3**	24
	BROKEN HILL PROPRIETARY AUSTRALIA 137	**9,127**	10	**925**	5	**10**	2	**6**	12
	KAWASAKI STEEL JAPAN 138	**9,081**	11	**378**	12	**4**	20	**3**	25
	PREUSSAG W. GERMANY 140	**8,987**	12	**149**	27	**2**	32	**2**	28
	BRITISH STEEL BRITAIN 147	**8,677**	13	**992**	3	**11**	1	**11**	1
	DEGUSSA W. GERMANY 162	**7,864**	14	**93**	31	**1**	34	**3**	26
	MITSUBISHI METAL JAPAN 194	**6,698**	15	**88**	32	**1**	33	**2**	32
	POHANG IRON & STEEL SOUTH KOREA 201	**6,472**	16	**214**	19	**3**	22	**2**	31
	LTV U.S. 205	**6,362**	17	**265**	16	**4**	19	**4**	18
	REYNOLDS METALS U.S. 214	**6,201**	18	**533**	7	**9**	5	**10**	3
	ARBED LUXEMBOURG 224	**5,824**	19	**251**	17	**4**	18	**4**	22
	SALZGITTER W. GERMANY 231	**5,747**	20	**182**	23	**3**	24	**4**	16
	VIAG W. GERMANY 243	**5,548**	21	**133**	29	**2**	28	**2**	29

INDUSTRY TABLE NUMBER	COMPANY, COUNTRY, Global 500 Rank	RANKED WITHIN INDUSTRY: SALES $ mil.	SALES Rank	PROFITS $ mil.	PROFITS Rank	PROFITS AS A PERCENT OF SALES %	SALES Rank	PROFITS AS A PERCENT OF ASSETS %	ASSETS Rank
	BETHLEHEM STEEL U.S. 250	5,306	22	246	18	5	17	5	14
	COCKERILL SAMBRE BELGIUM 259	5,167	23	390	11	8	8	7	6
	SIDERBRAS BRAZIL 280	4,756	24	(471)	38	(10)	38	(3)	35
	HOOGOVENS GROEP NETHERLANDS 307	4,305	25	354	14	8	7	7	7
	STEEL AUTHORITY OF INDIA INDIA 308	4,304	26	209	20	5	15	4	19
	INLAND STEEL INDUSTRIES U.S. 320	4,147	27	120	30	3	26	4	20
	AMAX U.S. 338	3,915	28	360	13	9	4	9	4
	EFIM ITALY 350	3,754	29	(18)	36	0	36	–	
	DOFASCO CANADA 385	3,329	30	184	22	6	13	4	17
	DAIDO STEEL JAPAN 390	3,258	31	57	35	2	31	2	30
	COOKSON GROUP BRITAIN 393	3,245	32	172	25	5	14	7	8
	OUTOKUMPU FINLAND 461	2,743	33	180	24	7	11	6	13
	PHELPS DODGE U.S. 462	2,726	34	267	15	10	3	11	2
	KLÖCKNER-WERKE W. GERMANY 464	2,713	35	(103)	37	(4)	37	(4)	36
	NATIONAL STEEL U.S. 482	2,577	36	83	33	3	23	5	15
	SSAB SVENSKT STÅL SWEDEN 491	2,533	37	141	28	6	12	7	10
	ARMCO U.S. 499	2,494	38	165	26	7	10	7	9
	TOTAL	307,065		11,989		–		–	
	MEDIAN	5,786		212		4		4	

16 MINING, CRUDE-OIL PRODUCTION 12 COMPANIES

	INI SPAIN 64	15,277	1	703	6	5	7	2	7
	RUHRKOHLE W. GERMANY 83	12,422	2	30	8	0	9	0	9
	RTZ BRITAIN 116	10,093	3	1,359	3	13	5	12	5
	BRITISH COAL BRITAIN 168	7,596	4	(359)	11	(5)	11	(3)	11
	VALE DO RIO DOCE BRAZIL 294	4,523	5	2,944	1	65	1	45	1
	DE BEERS CONSOLIDATED MINES SOUTH AFRICA 327	4,075	6	1,559	2	38	2	19	3
	CRA AUSTRALIA 328	4,027	7	514	7	13	6	8	6
	INCO CANADA 334	3,948	8	753	5	19	4	21	2
	CODELCO-CHILE CHILE 355	3,711	9	757	4	20	3	15	4
	COAL INDIA INDIA 427	2,963	10	(16)	10	(1)	10	0	10
	SAARBERGWERKE W. GERMANY 446	2,821	11	15	9	1	8	1	8
	ZAMBIA INDUSTRIAL & MINING ZAMBIA 455	2,756	12	–		–		–	
	TOTAL	74,213		8,259		–		–	
	MEDIAN	4,051		703		9		5	

INDUSTRY TABLE NUMBER	COMPANY, COUNTRY, Global 500 Rank	RANKED WITHIN INDUSTRY: SALES $ mil.	SALES Rank	PROFITS $ mil.	PROFITS Rank	PROFITS AS A PERCENT OF SALES %	SALES Rank	PROFITS AS A PERCENT OF ASSETS %	ASSETS Rank

17 MOTOR VEHICLES AND PARTS 42 COMPANIES

	GENERAL MOTORS U.S. 1	126,974	1	4,224	1	3	16	2	23
	FORD MOTOR U.S. 2	96,933	2	3,835	2	4	12	2	26
	TOYOTA MOTOR JAPAN 6	60,444	3	2,631	4	4	11	5	9
	DAIMLER-BENZ W. GERMANY 13	40,616	4	3,585	3	9	1	10	1
	FIAT ITALY 15	36,741	5	2,411	5	7	5	5	10
	CHRYSLER U.S. 16	36,156	6	359	12	1	34	1	40
	NISSAN MOTOR JAPAN 17	36,078	7	890	8	2	21	2	22
	VOLKSWAGEN W. GERMANY 21	34,746	8	523	11	2	27	2	32
	RENAULT FRANCE 27	27,457	9	1,457	7	5	8	7	8
	HONDA MOTOR JAPAN 30	26,484	10	758	10	3	19	4	13
	PEUGEOT FRANCE 35	24,091	11	1,616	6	7	3	9	3
	MITSUBISHI MOTORS JAPAN 56	16,840	12	147	22	1	37	1	35
	ROBERT BOSCH W. GERMANY 59	16,263	13	333	14	2	24	3	20
	MAZDA MOTOR JAPAN 62	15,572	14	99	27	1	39	1	38
	VOLVO SWEDEN 70	14,638	15	837	9	6	7	5	11
	BMW W. GERMANY 74	14,098	16	296	15	2	23	2	24
	ISUZU MOTORS JAPAN 124	9,868	17	122	25	1	28	2	29
	NIPPONDENSO JAPAN 126	9,663	18	348	13	4	13	4	16
	SUZUKI MOTOR JAPAN 175	7,404	19	50	35	1	38	1	37
	SAAB-SCANIA SWEDEN 181	7,219	20	156	21	2	22	2	27
	KOÇ HOLDING TURKEY 203	6,415	21	220	19	3	14	9	2
	HYUNDAI MOTOR SOUTH KOREA 221	5,845	22	62	32	1	31	1	36
	DAIHATSU MOTOR JAPAN 234	5,715	23	51	34	1	36	1	33
	FUJI HEAVY INDUSTRIES JAPAN 258	5,188	24	52	33	1	33	1	39
	DANA U.S. 260	5,157	25	132	24	3	20	3	21
	AISIN SEIKI JAPAN 288	4,633	26	93	28	2	26	3	18
	NAVISTAR INTERNATIONAL U.S. 309	4,296	27	87	29	2	25	2	25
	EATON U.S. 313	4,241	28	225	18	5	9	7	6
	HINO MOTORS JAPAN 315	4,203	29	44	37	1	32	2	28
	YAMAHA MOTOR JAPAN 322	4,127	30	49	36	1	29	1	34
	PACIFIC DUNLOP AUSTRALIA 353	3,719	31	(81)	42	(2)	42	(3)	42
	LUCAS INDUSTRIES BRITAIN 361	3,566	32	235	17	7	4	8	5
	GKN BRITAIN 373	3,467	33	200	20	6	6	7	7
	TOYODA AUTOMATIC LOOM WORKS JAPAN 377	3,455	34	100	26	3	18	4	15

INDUSTRY TABLE NUMBER	COMPANY COUNTRY	Global 500 Rank	RANKED WITHIN INDUSTRY: SALES $ mil.	Rank	PROFITS $ mil.	Rank	PROFITS AS A PERCENT OF SALES %	Rank	ASSETS %	Rank
	PACCAR U.S.	383	**3,373**	35	**242**	16	**7**	2	**8**	4
	ZAHNRADFABRIK FRIEDRICH. W. GERMANY	391	**3,254**	36	**38**	38	**1**	30	**2**	30
	VALEO FRANCE	413	**3,080**	37	**147**	23	**5**	10	**5**	12
	NISSAN SHATAI JAPAN	451	**2,790**	38	**17**	40	**1**	40	**2**	31
	KANTO AUTO WORKS JAPAN	474	**2,618**	39	**25**	39	**1**	35	**3**	17
	NIPPON SEIKO JAPAN	486	**2,549**	40	**86**	30	**3**	15	**3**	19
	NISSAN DIESEL MOTOR JAPAN	488	**2,545**	41	**15**	41	**1**	41	**1**	41
	DAF NETHERLANDS	500	**2,484**	42	**81**	31	**3**	17	**4**	14
	TOTAL		**745,004**		**26,800**		–		–	
	MEDIAN		**6,130**		**152**		**2**		**3**	
18	**PETROLEUM REFINING** 52 COMPANIES									
	EXXON U.S.	3	**86,656**	1	**3,510**	2	**4**	24	**4**	25
	ROYAL DUTCH/SHELL GROUP BRITAIN/NETHERLANDS	4	**85,528**	2	**6,483**	1	**8**	7	**7**	11
	MOBIL U.S.	8	**50,976**	3	**1,809**	7	**4**	27	**5**	22
	BRITISH PETROLEUM BRITAIN	10	**49,484**	4	**3,499**	3	**7**	11	**7**	13
	TEXACO U.S.	23	**32,416**	5	**2,413**	5	**7**	8	**9**	6
	CHEVRON U.S.	25	**29,443**	6	**251**	27	**1**	47	**1**	49
	ENI ITALY	28	**27,119**	7	**1,126**	11	**4**	23	**3**	32
	AMOCO U.S.	34	**24,214**	8	**1,610**	9	**7**	12	**5**	18
	ELF AQUITAINE FRANCE	37	**23,501**	9	**1,132**	10	**5**	21	**3**	27
	USX U.S.	52	**17,755**	10	**965**	13	**5**	17	**6**	16
	TOTAL FRANCE	55	**16,927**	11	**346**	22	**2**	36	**2**	34
	PETROBRAS BRAZIL	58	**16,360**	12	**513**	18	**3**	30	**3**	29
	ATLANTIC RICHFIELD U.S.	60	**15,905**	13	**1,953**	6	**12**	4	**9**	7
	PEMEX (PETRÓLEOS MEX.) MEXICO	65	**15,258**	14	**320**	23	**2**	35	**1**	48
	NIPPON OIL JAPAN	71	**14,563**	15	**216**	29	**1**	42	**2**	40
	PETRÓLEOS DE VENEZUELA VENEZUELA	76	**13,677**	16	**2,718**	4	**20**	3	**31**	1
	PHILLIPS PETROLEUM U.S.	82	**12,492**	17	**219**	28	**2**	38	**2**	37
	KUWAIT PETROLEUM KUWAIT	92	**11,796**	18	**735**	14	**6**	13	**3**	28
	PETROFINA BELGIUM	98	**11,270**	19	**554**	16	**5**	20	**5**	17
	IDEMITSU KOSAN JAPAN	99	**11,249**	20	**13**	52	**0**	52	**0**	52
	INDIAN OIL INDIA	106	**10,610**	21	**356**	21	**3**	28	**8**	8
	UNOCAL U.S.	109	**10,417**	22	**260**	25	**2**	32	**3**	31
	REPSOL SPAIN	119	**9,998**	23	**545**	17	**5**	16	**6**	15
	SUN U.S.	122	**9,927**	24	**98**	41	**1**	45	**1**	44
	COSMO OIL JAPAN	130	**9,488**	25	**82**	44	**1**	46	**1**	45
	SUNKYONG SOUTH KOREA	139	**9,014**	26	**154**	36	**2**	39	**2**	33
	STATOIL NORWAY	145	**8,735**	27	**734**	15	**8**	6	**8**	9
	COASTAL U.S.	150	**8,607**	28	**170**	33	**2**	37	**2**	38
	SHOWA SHELL SEKIYU JAPAN	152	**8,230**	29	**46**	47	**1**	50	**1**	47
	NESTE FINLAND	154	**8,124**	30	**434**	20	**5**	18	**5**	19
	ASHLAND OIL U.S.	158	**8,017**	31	**86**	43	**1**	44	**2**	39
	CHINESE PETROLEUM TAIWAN	159	**8,008**	32	**1,776**	8	**22**	2	**17**	2
	VEBA OEL W. GERMANY	171	**7,492**	33	**22**	51	**0**	51	**1**	50
	SSANGYONG SOUTH KOREA	173	**7,422**	34	**172**	32	**2**	34	**1**	43
	NIPPON MINING JAPAN	210	**6,250**	35	**106**	39	**2**	41	**1**	42
	AMERADA HESS U.S.	241	**5,589**	36	**476**	19	**9**	5	**7**	12
	TONEN JAPAN	271	**4,891**	37	**184**	31	**4**	26	**4**	26
	OIL & NATURAL GAS COMMISSION INDIA	275	**4,816**	38	**1,108**	12	**23**	1	**11**	4
	TÜRKIYE PETROLLERI TURKEY	298	**4,457**	39	**274**	24	**6**	14	**7**	10
	PETRO-CANADA CANADA	332	**3,960**	40	**26**	49	**1**	49	**0**	51
	MITSUBISHI OIL JAPAN	339	**3,910**	41	**67**	46	**2**	40	**2**	41
	CEPSA SPAIN	347	**3,837**	42	**92**	42	**2**	33	**5**	24
	HINDUSTAN PETROLEUM INDIA	352	**3,746**	43	**120**	38	**3**	29	**12**	3
	PETRONAS MALAYSIA	364	**3,533**	44	**253**	26	**7**	10	**3**	30
	KF INDUSTRI SWEDEN	379	**3,423**	45	**23**	50	**1**	48	**1**	46
	KERR-MCGEE U.S.	406	**3,122**	46	**156**	35	**5**	19	**5**	21
	HONAM OIL SOUTH KOREA	419	**3,030**	47	**40**	48	**1**	43	**2**	36
	ULTRAMAR BRITAIN	437	**2,882**	48	**168**	34	**6**	15	**5**	23
	BHARAT PETROLEUM INDIA	450	**2,793**	49	**72**	45	**3**	31	**7**	14
	PIONEER INTERNATIONAL AUSTRALIA	452	**2,779**	50	**125**	37	**5**	22	**5**	20
	PENNZOIL U.S.	459	**2,750**	51	**104**	40	**4**	25	**2**	35
	BURMAH OIL BRITAIN	496	**2,519**	52	**187**	30	**7**	9	**10**	5
	TOTAL		**758,965**		**38,901**		–		–	
	MEDIAN		**8,874**		**252**		**4**		**4**	
19	**PHARMACEUTICALS** 17 COMPANIES									
	JOHNSON & JOHNSON U.S.	125	**9,844**	1	**1,082**	4	**11**	8	**14**	7
	BRISTOL-MYERS SQUIBB U.S.	132	**9,422**	2	**747**	7	**8**	10	**9**	9
	SMITHKLINE BEECHAM BRITAIN	157	**8,029**	3	**213**	14	**3**	17	**4**	15
	SANDOZ SWITZERLAND	165	**7,766**	4	**586**	9	**8**	11	**8**	11

INDUSTRY TABLE NUMBER	COMPANY, COUNTRY	Global 500 Rank	RANKED WITHIN INDUSTRY: SALES $ mil.	Rank	PROFITS $ mil.	Rank	PROFITS AS A PERCENT OF SALES %	Rank	PROFITS AS A PERCENT OF ASSETS %	Rank
	AMERICAN HOME PRODUCTS U.S.	190	6,747	5	1,102	3	16	4	19	3
	MERCK U.S.	193	6,698	6	1,495	1	22	3	22	1
	PFIZER U.S.	219	5,904	7	681	8	12	7	8	10
	TAKEDA CHEMICAL JAPAN	244	5,454	8	302	12	6	14	5	14
	ABBOTT LABORATORIES U.S.	245	5,454	9	860	6	16	5	18	4
	GLAXO HOLDINGS BRITAIN	303	4,408	10	1,180	2	27	1	22	2
	WARNER-LAMBERT U.S.	311	4,272	11	413	11	10	9	14	6
	ELI LILLY U.S.	317	4,176	12	940	5	22	2	16	5
	SANKYO JAPAN	382	3,376	13	108	17	3	16	4	16
	PROCORDIA SWEDEN	387	3,293	14	222	13	7	12	7	12
	SCHERING-PLOUGH U.S.	394	3,243	15	471	10	15	6	13	8
	SCHERING W. GERMANY	409	3,108	16	120	16	4	15	3	17
	UPJOHN U.S.	420	3,001	17	176	15	6	13	5	13
	TOTAL		94,194		10,697		—		—	
	MEDIAN		5,454		586		10		9	

20 PUBLISHING, PRINTING 12 COMPANIES

	DAI NIPPON PRINTING JAPAN	161	7,892	1	274	6	3	8	4	8
	TIME WARNER U.S.	167	7,642	2	(256)	12	(3)	12	(1)	12
	TOPPAN PRINTING JAPAN	182	7,217	3	225	7	3	9	4	9
	BERTELSMANN W. GERMANY	191	6,717	4	138	10	2	10	4	10
	NEWS CORP. AUSTRALIA	202	6,453	5	949	1	15	3	7	7
	THOMSON CORP. CANADA	264	5,112	6	929	2	18	2	13	2
	HACHETTE FRANCE	290	4,606	7	74	11	2	11	2	11
	GANNETT U.S.	365	3,523	8	398	4	11	4	11	3
	TIMES MIRROR U.S.	367	3,517	9	298	5	8	5	8	6
	R.R. DONNELLY U.S.	404	3,128	10	222	8	7	7	9	5
	MOORE CANADA	458	2,751	11	202	9	7	6	10	4
	REED INTERNATIONAL BRITAIN	460	2,749	12	881	3	32	1	23	1
	TOTAL		61,307		4,334		—		—	
	MEDIAN		4,859		250		7		7	

21 RUBBER AND PLASTICS PRODUCTS 8 COMPANIES

	BRIDGESTONE JAPAN	84	12,379	1	68	6	1	8	1	8
	GOODYEAR TIRE U.S.	103	11,045	2	207	2	2	6	2	4
	MICHELIN FRANCE	148	8,669	3	384	1	4	1	3	3
	PIRELLI ITALY/SWITZERLAND	170	7,542	4	174	3	2	5	2	6
	CONTINENTAL W. GERMANY	299	4,456	5	121	4	3	3	4	2
	SUMITOMO RUBBER JAPAN	371	3,481	6	48	8	1	7	2	7
	YOKOHAMA RUBBER JAPAN	472	2,628	7	64	7	2	4	2	5
	PREMARK INT'L U.S.	480	2,601	8	78	5	3	2	4	1
	TOTAL		52,801		1,145		—		—	
	MEDIAN		6,049		100		2		2	

22 SCIENTIFIC AND PHOTOGRAPHIC EQUIP. 7 COMPANIES

	EASTMAN KODAK U.S.	50	18,546	1	529	4	3	6	2	6
	XEROX U.S.	54	17,635	2	704	2	4	5	2	5
	MINNESOTA MIN. & MFG. U.S.	88	11,990	3	1,244	1	10	1	13	1
	BAXTER INTERNATIONAL U.S.	176	7,399	4	446	5	6	4	5	4
	FUJI PHOTO FILM JAPAN	177	7,368	5	650	3	9	3	7	3
	SCHLUMBERGER NETHERLANDS ANTILLES	273	4,844	6	441	6	9	2	8	2
	KONICA JAPAN	354	3,716	7	15	7	0	7	0	7
	TOTAL		71,497		4,030		—		—	
	MEDIAN		7,399		529		6		5	

23 SOAPS, COSMETICS 9 COMPANIES

	PROCTER & GAMBLE U.S.	41	21,689	1	1,206	1	6	4	7	3
	COLGATE-PALMOLIVE U.S.	265	5,110	2	280	3	5	5	8	2
	KAO JAPAN	296	4,490	3	135	6	3	6	3	6
	L'ORÉAL FRANCE	312	4,262	4	283	2	7	2	7	4
	SVENSKA CELLULOSA SWEDEN	335	3,935	5	251	4	6	3	5	5
	AVON PRODUCTS U.S.	380	3,396	6	55	8	2	9	3	7
	SHISEIDO JAPAN	399	3,191	7	81	7	3	7	2	8
	REVLON GROUP U.S.	431	2,942	8	53	9	2	8	1	9
	RECKITT & COLMAN BRITAIN	481	2,580	9	202	5	8	1	11	1
	TOTAL		51,596		2,546		—		—	
	MEDIAN		3,935		202		5		5	

24 TEXTILES 12 COMPANIES

	ASAHI CHEMICAL INDUSTRY JAPAN	160	7,992	1	268	1	3	6	4	5

INDUSTRY TABLE NUMBER	COMPANY COUNTRY	Global 500 Rank	RANKED WITHIN INDUSTRY SALES $ mil.	Rank	PROFITS $ mil.	Rank	PROFITS AS A PERCENT OF SALES %	Rank	ASSETS %	Rank
	TORAY INDUSTRIES JAPAN	211	6,250	2	261	2	4	4	4	4
	KANEBO JAPAN	268	5,035	3	34	8	1	9	1	9
	HACI ÖMER SABANCI TURKEY	276	4,811	4	227	3	5	2	5	2
	WICKES U.S.	277	4,802	5	(123)	12	(3)	12	(3)	12
	HYOSUNG SOUTH KOREA	278	4,782	6	22	10	0	10	1	10
	TEIJIN JAPAN	301	4,424	7	158	5	4	5	3	6
	TOYOBO JAPAN	333	3,958	8	56	7	1	7	2	7
	COATS VIYELLA BRITAIN	408	3,121	9	132	6	4	3	5	3
	ARMSTRONG WORLD IND. U.S.	440	2,864	10	188	4	7	1	9	1
	UNITIKA JAPAN	477	2,608	11	29	9	1	8	1	8
	WEST POINT-PEPPERELL U.S.	485	2,568	12	(19)	11	(1)	11	(1)	11
	TOTAL		53,215		1,232		–		–	
	MEDIAN		4,603		94		2		2	

25 TOBACCO 5 COMPANIES

	BAT INDUSTRIES BRITAIN	36	23,529	1	2,123	1	9	1	11	1
	JAPAN TOBACCO JAPAN	164	7,769	2	298	3	4	3	3	5
	AMERICAN BRANDS U.S.	178	7,265	3	631	2	9	2	6	3
	UNIVERSAL U.S.	432	2,920	4	54	5	2	5	5	4
	TABACALERA SPAIN	469	2,653	5	87	4	3	4	6	2
	TOTAL		44,137		3,194		–		–	
	MEDIAN		7,265		298		4		6	

26 TOYS, SPORTING GOODS 1 COMPANY

	YAMAHA JAPAN	348	3,794	1	28	1	1	1	1	1

27 TRANSPORTATION EQUIPMENT 4 COMPANIES

	KAWASAKI HEAVY INDUSTRIES JAPAN	187	6,906	1	91	3	1	3	1	3
	SOLVAY BELGIUM	195	6,693	2	393	1	6	1	6	1
	HYUNDAI HEAVY INDUSTRIES SOUTH KOREA	300	4,429	3	94	2	2	2	2	2
	BRUNSWICK U.S.	445	2,826	4	(71)	4	(3)	4	(4)	4
	TOTAL		20,853		507		–		–	
	MEDIAN		5,561		92		2		1	

DEFINITIONS AND EXPLANATIONS

SALES

All companies on the list must have derived more than 50% of their sales from manufacturing and/or mining. Sales of consolidated subsidiaries are included. All figures are for the year ended December 31, 1989, unless otherwise noted. Sales figures do not include excise taxes collected by manufacturers, and so the figures for some corporations—most of which sell gasoline, liquor, or tobacco—may be lower than those published by the corporations themselves.

PROFITS

Profits are shown after taxes and after extraordinary credits or charges if any appear on the income statement. A double asterisk (**) signifies an extraordinary credit reflecting at least 10% of the profits shown, a double dagger (‡) an extraordinary charge of at least 10%. Figures in parentheses indicate a loss. Profit declines over 100% reflect swings from 1988 profits to 1989 losses. Cooperatives provide only "net margin" figures, which are not comparable with the profits figures in these listings, and therefore N.A. is shown in that column.

ASSETS

Assets shown are those at the company's fiscal year-end.

STOCKHOLDERS' EQUITY

Stockholders' equity is the sum of capital stock, surplus, and retained earnings at the company's year-end.

INDUSTRY TABLES

Industry table numbers used in the directory indicate the groups in which companies are placed in "The Global 500/The Biggest Companies by Industry," beginning on page 300. Companies are included in the industry that represents the greatest volume of their industrial sales. Industry groups are based on categories established by the U.S. Office of Management and Budget and issued by the Federal Statistical Policy and Standards Office. The median figures in the tables refer only to results of companies in the 500; no attempt has been made to calculate medians in groups with fewer than four companies.

Most of the figures in this FORTUNE 500 Directory were prepared by Jung Ah Pak and Sally Solo, who are responsible for the columns reporting on companies' sales, assets, profits, and stockholders' equity, and the industry table numbers.

INDUSTRY MEDIANS

RETURN ON SALES

	1989
PHARMACEUTICALS	9.7%
MINING, CRUDE-OIL PRODUCTION	8.7
PUBLISHING, PRINTING	7.2
BUILDING MATERIALS	6.4
BEVERAGES	6.2
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT	6.0
CHEMICALS	6.0
SOAPS, COSMETICS	5.5
METAL PRODUCTS	5.4
FOREST PRODUCTS	5.3
METALS	4.2
TOBACCO	3.8
PETROLEUM REFINING	3.7
ELECTRONICS	3.5
FOOD	3.4
AEROSPACE	2.9
COMPUTERS (INCLUDES OFFICE EQUIPMENT)	2.8
INDUSTRIAL AND FARM EQUIPMENT	2.6
TEXTILES	2.4
RUBBER AND PLASTICS PRODUCTS	2.4
MOTOR VEHICLES AND PARTS	2.3
TRANSPORTATION EQUIPMENT	1.7
THE 500 MEDIAN	4.0

RETURN ON ASSETS

	1989
PHARMACEUTICALS	8.8%
PUBLISHING, PRINTING	7.1
BEVERAGES	6.0
TOBACCO	5.5
BUILDING MATERIALS	5.5
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT	5.2
MINING, CRUDE-OIL PRODUCTION	5.2
CHEMICALS	5.2
SOAPS, COSMETICS	5.0
FOOD	4.9
METAL PRODUCTS	4.8
FOREST PRODUCTS	4.5
METALS	4.0
PETROLEUM REFINING	3.6
ELECTRONICS	3.4
COMPUTERS (INCLUDES OFFICE EQUIPMENT)	2.6
AEROSPACE	2.6
MOTOR VEHICLES AND PARTS	2.5
RUBBER AND PLASTICS PRODUCTS	2.4
INDUSTRIAL AND FARM EQUIPMENT	2.2
TEXTILES	2.0
TRANSPORTATION EQUIPMENT	1.5
THE 500 MEDIAN	4.3

INDUSTRY TOTALS

	SALES		PROFITS		ASSETS		STOCKHOLDERS' EQUITY		EMPLOYEES	
	$ MIL	RANK	$ MIL	RANK	$ MIL	RANK	$ MIL	RANK	NUMBER	RANK
PETROLEUM REFINING	758,965	1	38,901	1	803,511	1	312,126	1	1,658,347	6
MOTOR VEHICLES AND PARTS	745,004	2	26,800	2	803,047	2	194,286	2	3,822,576	2
ELECTRONICS	589,489	3	22,165	4	686,810	3	187,075	3	4,162,064	1
FOOD	378,764	4	14,917	5	312,576	5	83,260	5	2,201,285	3
CHEMICALS	374,688	5	23,385	3	402,661	4	142,178	4	2,008,754	4
METALS	307,065	6	11,989	6	278,932	6	72,280	7	1,958,666	5
COMPUTERS (INCLUDES OFFICE EQUIPMENT)	177,288	7	6,207	11	189,305	7	83,196	6	1,210,154	9
INDUSTRIAL AND FARM EQUIPMENT	165,575	8	4,103	16	182,097	8	46,446	10	1,143,973	10
AEROSPACE	157,173	9	4,955	13	139,591	10	39,711	12	1,363,080	7
FOREST PRODUCTS	139,290	10	7,645	9	167,044	9	55,190	8	752,496	11
PHARMACEUTICALS	94,194	11	10,697	7	93,292	14	45,284	11	631,877	13
BEVERAGES	91,525	12	6,663	10	119,838	11	46,651	9	725,426	12
METAL PRODUCTS	84,412	13	4,531	14	89,262	16	25,305	16	464,216	17
BUILDING MATERIALS	81,174	14	5,795	12	96,583	13	19,754	17	620,994	14
MINING, CRUDE-OIL PRODUCTION	74,213	15	8,259	8	105,436	12	35,278	13	1,267,083	8
SCIENTIFIC AND PHOTOGRAPHIC EQUIPMENT	71,497	16	4,030	17	90,694	15	31,254	14	488,157	16
PUBLISHING, PRINTING	61,307	17	4,334	15	83,333	17	31,062	15	356,642	19
TEXTILES	53,215	18	1,232	20	51,892	18	14,485	20	290,944	20
RUBBER AND PLASTICS PRODUCTS	52,301	19	1,145	21	51,590	19	13,044	21	501,667	15
SOAPS, COSMETICS	51,596	20	2,546	19	44,289	20	16,186	19	272,547	21
TOBACCO	44,137	21	3,194	18	43,959	21	19,063	18	414,295	18
TRANSPORTATION EQUIPMENT	20,853	22	507	22	21,619	22	5,522	22	140,558	22
FURNITURE	6,967	23	168	24	4,190	23	(28)	25	89,500	23
APPAREL	6,168	24	448	23	3,910	24	1,214	23	76,000	24
TOYS, SPORTING GOODS	3,794	25	28	25	3,420	25	1,092	24	17,136	25
TOTAL	4,591,154		214,639		4,868,881		1,520,913		26,638,437	

COMPANY	SALES RANK
A	
ABBOTT LABORATORIES	245
ABITIBI-PRICE	457
AÉROSPATIALE	232
AGWAY	395
AIR PRODUCTS & CHEMICALS	467
AISIN SEIKI	288
AJINOMOTO	323
AKZO	142
ALCAN ALUMINIUM	141
ALLIED-LYONS	189
ALLIED-SIGNAL	87
ALPS ELECTRIC	429
ALUMINUM CO. OF AMERICA	101
ALUSUISSE	291
AMAX	338
AMERADA HESS	241
AMERICAN BRANDS	178
AMERICAN CYANAMID	274
AMERICAN HOME PRODUCTS	190
AMERICAN STANDARD	359
AMOCO	34
AMP	447
ANHEUSER-BUSCH	131
APPLE COMPUTER	251
ARBED	224
ARCHER-DANIELS-MIDLAND	156
ARMCO	499
ARMSTRONG WORLD INDUST.	440
ASAHI BREWERIES	358
ASAHI CHEMICAL INDUSTRY	160
ASAHI GLASS	155
ASEA BROWN BOVERI	43
ASHLAND OIL	158
ASSOCIATED BRITISH FOODS	302
ATLANTIC RICHFIELD	60
AVON PRODUCTS	380
B	
BARLOW RAND	108
BASF	31
BASS	238
BAT INDUSTRIES	36
BAXTER INTERNATIONAL	176
BAYER	38
BEATRICE	295
BERTELSMANN	191
BETHLEHEM STEEL	250
BHARAT PETROLEUM	450
BICC	213
BLACK & DECKER	396
BMW	74
BOC GROUP	340
BOEING	45
BOISE CASCADE	306
BOND CORP. HOLDINGS	228
BORAL	425
BORDEN	169
BOSCH (ROBERT)	59
BRIDGESTONE	84
BRISTOL-MYERS SQUIBB	132
BRITISH AEROSPACE	69
BRITISH COAL	168
BRITISH PETROLEUM	10
BRITISH STEEL	147
BROKEN HILL PROPRIETARY	137
BRUNSWICK	445
BSN	166
BTR	94
BULL	257
BURMAH OIL	496
C	
CADBURY SCHWEPPES	285
CAMPBELL SOUP	235
CANADIAN PACIFIC	134
CANON	118
CATERPILLAR	102
CEA-INDUSTRIE	252
CEPSA	347
CGE	39
CHAMPION INTERNATIONAL	253
CHEVRON	25
CHINESE PETROLEUM	159
CHRYSLER	16
CIBA-GEIGY	81
CMB PACKAGING	384
COAL INDIA	427
COASTAL	150
COATS VIYELLA	408
COCA-COLA	136
COCA-COLA ENTERPRISES	341
COCKERILL SAMBRE	259
CODELCO-CHILE	355
COLGATE-PALMOLIVE	265
COMPAQ COMPUTER	438
CONAGRA	97
CONTINENTAL	299
CONTROL DATA	430
COOKSON GROUP	393
COOPER INDUSTRIES	262
COSMO OIL	130
COURTAULDS	289
CPC INTERNATIONAL	263
CRA	328
CSR	444
CUMMINS ENGINE	368
D	
DAEWOO	47
DAF	500
DAIDO STEEL	390
DAIHATSU MOTOR	234
DAIMLER-BENZ	13
DAINIPPON INK & CHEMICALS	242
DAI NIPPON PRINTING	161
DAISHOWA PAPER MFG.	441
DALGETY	153
DANA	260
DASSAULT AVIATION	415
DE BEERS CONSOLIDATED MINES	327
DEERE	180
DEGUSSA	162
DEUTSCHE BABCOCK	439
DIGITAL EQUIPMENT	78
DOFASCO	385
DONNELLEY (R.R.) & SONS	404
DOOSAN	483
DOW CHEMICAL	53
DRESSER INDUSTRIES	330
DSM	266
DU PONT DE NEMOURS (E.I.)	19
E	
EASTMAN KODAK	50
EATON	313
EFIM	350
ELDERS IXL	112
ELECTROLUX	77
ELF AQUITAINE	37
EMERSON ELECTRIC	185
ENI	28
ENIMONT	100
ENSO-GUTZEIT	497
ENTR. MINIÈRE & CHIMIQUE	478
ERCROS	442
ERICSSON (L.M.)	212
ESSELTE	479
ETHYL	456
EXXON	3
F	
FARMLAND INDUSTRIES	424
FELDMÜHLE NOBEL	255
FERRUZZI FINANZIARIA	85
FIAT	15
FLETCHER CHALLENGE	199
FMC	374
FORD MOTOR	2
FUJI ELECTRIC	247
FUJI HEAVY INDUSTRIES	258
FUJI PHOTO FILM	177
FUJITSU	49
FURUKAWA ELECTRIC	239
G	
GANNETT	365
GEC (GENERAL ELECTRIC CO.)	111
GENERAL DYNAMICS	117
GENERAL ELECTRIC	7
GENERAL MILLS	227
GENERAL MOTORS	1
GEORGIA-PACIFIC	113
GILLETTE	346
GKN	373
GLAXO HOLDINGS	303
GOLDSTAR	344
GOODMAN FIELDER WATTIE	487
GOODRICH (B.F.)	494
GOODYEAR TIRE & RUBBER	103
GRACE (W.R.)	207
GRAND METROPOLITAN	73
GREAT NORTHERN NEKOOSA	343
GRUMMAN	362
GUINNESS	370
H	
HACHETTE	290
HANSON	91
HAWKER SIDDELEY GROUP	366
HEINEKEN	403
HEINZ (H.J.)	222
HENKEL	215
HERCULES	407
HEWLETT-PACKARD	89
HILLSDOWN HOLDINGS	217
HINDUSTAN PETROLEUM	352
HINO MOTORS	315
HITACHI	9
HOECHST	33
HOESCH	237
HOLDERBANK	416
HONAM OIL REFINERY	419
HONDA MOTOR	30
HONEYWELL	179
HONSHU PAPER	381
HOOGOVENS GROEP	307
HÜLS	281
HYOSUNG	278
HYUNDAI HEAVY INDUSTRIES	300
HYUNDAI MOTOR	221
I	
IDEMITSU KOSAN	99
IMPERIAL CHEMICAL IND.	40
INCO	334
INDIAN OIL	106
INGERSOLL-RAND	378
INI	64
INLAND STEEL INDUSTRIES	320
INTEL	388
INTERCO	389
INT'L BUSINESS MACHINES	5
INTERNATIONAL PAPER	96
IRI	11
ISHIKAWAJIMA-HARIMA	209
ISUZU MOTORS	124
ITOHAM FOODS	398
J	
JACOBS SUCHARD	326
JAMES RIVER CORP. OF VA.	220
JAPAN TOBACCO	164
JOHNSON CONTROLS	357
JOHNSON & JOHNSON	125
JOHNSON MATTHEY	492
JUJO PAPER	336
K	
KANEBO	268
KANTO AUTO WORKS	474
KAO	296
KAWASAKI HEAVY INDUSTRIES	187
KAWASAKI STEEL	138
KELLOGG	283
KEMIRA	484
KERR-MCGEE	406
KF INDUSTRI	379
KIMBERLY-CLARK	230
KIRIN BREWERY	270
KLÖCKNER-WERKE	464
KOBE STEEL	123
KOÇ HOLDING	203
KOMATSU	206
KONICA	354
KRUPP (FRIED.)	133
KUBOTA	240
KUWAIT PETROLEUM	92
KYMMENE	473
KYOCERA	463
L	
LABATT (JOHN)	331
LAFARGE COPPÉE	279
L'AIR LIQUIDE	297
LILLY (ELI)	317
LINDE	435
LITTON INDUSTRIES	261
LOCKHEED	120
L'ORÉAL	312
LTV	205
LUCAS INDUSTRIES	361
LVMH	426
LYONDELL PETROCHEMICAL	246

COMPANY	SALES RANK
M	
MAN	135
MANNESMANN	90
MARTIN MARIETTA	226
MASCO	401
MATRA	372
MATSUSHITA ELECTRIC IND.	12
MATSUSHITA ELECTRIC WORKS	196
MAYTAG	412
MAZDA MOTOR	62
MCDERMOTT INTERNATIONAL	498
MCDONNELL DOUGLAS	68
MEAD	286
MEIJI MILK PRODUCTS	402
MERCK	193
METALLGESELLSCHAFT	105
MICHELIN	148
MINNESOTA MINING & MFG.	88
MITSUBISHI ELECTRIC	42
MITSUBISHI HEAVY INDUSTRIES	67
MITSUBISHI KASEI	149
MITSUBISHI METAL	194
MITSUBISHI MINING & CEMENT	465
MITSUBISHI MOTORS	56
MITSUBISHI OIL	339
MITSUBISHI PETROCHEMICAL	397
MITSUI TOATSU CHEMICALS	351
MOBIL	8
MONSANTO	146
MO OCH DOMSJO	423
MOORE	458
MORINAGA MILK INDUSTRY	475
MOTOROLA	128
N	
NATIONAL STEEL	482
NAVISTAR INTERNATIONAL	309
NCR	218
NEC	32
NESTE	154
NESTLÉ	26
NEWS CORP.	202
NIPPONDENSO	126
NIPPON LIGHT METAL	321
NIPPON MEAT PACKERS	287
NIPPON MINING	210
NIPPON OIL	71
NIPPON SEIKO	486
NIPPON STEEL	44
NIPPON SUISAN KAISHA	316
NISSAN DIESEL MOTOR	488
NISSAN MOTOR	17
NISSAN SHATAI	451
NISSHIN FLOUR MILLING	443
NISSHIN STEEL	369
NIXDORF COMPUTER	466
NKK	104
NOBEL INDUSTRIES	363
NOKIA	249
NORANDA	163
NORSK HYDRO	129
NORTHERN TELECOM	216
NORTHROP	256
NOVA	325
O	
OCCIDENTAL PETROLEUM	46
OERLIKON-BÜHRLE	434
OIL & NATURAL GAS COMM.	275
OJI PAPER	282
OKI ELECTRIC INDUSTRY	304
OLIN	493
OLIVETTI	198
OMRON	433
ONODA CEMENT	411
ORKEM	349
OUTOKUMPU	461
OWENS-CORNING FIBERGLAS	422
OWENS-ILLINOIS	356
P	
PACCAR	383
PACIFIC DUNLOP	353
PARKER HANNIFIN	495
PECHINEY	75
PEMEX	65
PENNZOIL	459
PEPSICO	63
PETROBRAS	58
PETRO-CANADA	332
PETROFINA	98
PETRÓLEOS DE VENEZUELA	76
PETRONAS	364
PEUGEOT	35
PFIZER	219
PHELPS DODGE	462
PHILIP MORRIS	14
PHILIPS	29
PHILLIPS PETROLEUM	82
PILKINGTON	293
PIONEER ELECTRONIC	386
PIONEER INTERNATIONAL	452
PIRELLI	170
PITNEY BOWES	428
POHANG IRON & STEEL	201
PPG INDUSTRIES	223
PREMARK INTERNATIONAL	480
PREUSSAG	140
PROCORDIA	387
PROCTER & GAMBLE	41
Q	
QUAKER OATS	233
QUANTUM CHEMICAL	470
R	
RACAL ELECTRONICS	448
RALSTON PURINA	192
RANKS HOVIS MCDOUGALL	418
RAUMA-REPOLA	449
RAYTHEON	143
RECKITT & COLMAN	481
REED INTERNATIONAL	460
RENAULT	27
REPSOL	119
REVLON GROUP	431
REYNOLDS METALS	214
RHÔNE-POULENC	95
RICOH	229
RJR NABISCO HOLDINGS	66
RMC GROUP	314
ROCHE/SAPAC	204
ROCKWELL INTERNATIONAL	80
ROHM & HAAS	468
ROLLS-ROYCE	272
ROYAL DUTCH/SHELL GROUP	4
RTZ	116
RUHRKOHLE	83
S	
SAAB-SCANIA	181
SAARBERGWERKE	446
SABANCI (HACI ÖMER)	276
SABIC	471
SAINT-GOBAIN	110
SALZGITTER	231
SAMSUNG	20
SANDOZ	165
SANDVIK	421
SANKYO	392
SANYO ELECTRIC	107
SANYO-KOKUSAKU PULP	376
SARA LEE	93
SCHERING	409
SCHERING-PLOUGH	394
SCHLUMBERGER	273
SCHNEIDER	184
SCOTT PAPER	267
SEAGRAM	337
SEKISUI CHEMICAL	269
SHARP	121
SHIN-ETSU CHEMICAL	400
SHISEIDO	399
SHOWA DENKO	319
SHOWA SHELL SEKIYU	152
SIDERBRÁS	280
SIEMENS	22
SKF	342
SMITHKLINE BEECHAM	157
SNECMA	375
SNOW BRAND MILK PRODUCTS	183
SOLVAY	195
SONY	57
SOURCE PERRIER	410
SSAB SVENSKT STÅL	491
SSANGYONG	173
STATOIL	145
STC	310
STEEL AUTHORITY OF INDIA	308
STONE CONTAINER	248
STORA KOPPARBERGS BERG.	200
STRAUSS (LEVI)	360
SULZER BROTHERS	324
SUMITOMO CHEMICAL	186
SUMITOMO ELECTRIC IND.	188
SUMITOMO HEAVY INDUSTRIES	436
SUMITOMO METAL INDUSTRIES	127
SUMITOMO RUBBER	371
SUN	122
SUNKYONG	139
SUZUKI MOTOR	175
SVENSKA CELLULOSA	335
T	
TABACALERA	469
TAIYO FISHERY	151
TAKEDA CHEMICAL	244
TATE & LYLE	236
TDK	392
TEIJIN	301
TELEDYNE	284
TENNECO	72
TEXACO	23
TEXAS INSTRUMENTS	197
TEXTRON	172
THOMSON	86
THOMSON CORP.	264
THORN EMI	225
THYSSEN	51
TIMES MIRROR	367
TIME WARNER	167
TONEN	271
TOPPAN PRINTING	182
TORAY INDUSTRIES	211
TOSHIBA	24
TOTAL	55
TOYOBO	333
TOYODA AUTO. LOOM WORKS	377
TOYO SASH	417
TOYO SEIKAN	254
TOYOTA MOTOR	6
TRELLEBORG	305
TRW	174
TÜRKIYE PETROLLERI	298
TYSON FOODS	490
U	
UBE INDUSTRIES	292
ULTRAMAR	437
UNIGATE	318
UNILEVER	18
UNION CAMP	454
UNION CARBIDE	144
UNISYS	115
UNITED BRANDS	345
UNITED TECHNOLOGIES	48
UNITIKA	477
UNIVERSAL	432
UNOCAL	109
UPJOHN	420
USINOR-SACILOR	61
USX	52
V	
VALE DO RIO DOCE	294
VALEO	413
VEBA OEL	171
VF	489
VIAG	243
VOLKSWAGEN	21
VOLVO	70
W	
WANG LABORATORIES	414
WARNER-LAMBERT	311
WESTINGHOUSE ELECTRIC	79
WEST POINT-PEPPERELL	485
WEYERHAEUSER	114
WHIRLPOOL	208
WHITBREAD	453
WHITMAN	329
WICKES	277
X	
XEROX	54
Y	
YAMAHA	348
YAMAHA MOTOR	322
YAMAZAKI BAKING	405
YOKOHAMA RUBBER	472
Z	
ZAHNRADFABRIK FRIEDRICH.	391
ZAMBIA INDUSTRIAL & MINING	455
ZENITH ELECTRONICS	476

JAPAN IS STILL NO. 1

Japan continues to dominate global banking. Eight of the top ten banks in the world ranked by assets are Japanese (the others are French). For the fourth straight year, Dai-Ichi Kangyo is No. 1. The 30 Japanese banks on the list—the most from any country—control $5.6 trillion of assets, more than the banks of the U.S., France, West Germany, Britain, and Italy combined.

But size is becoming less important than strength. The new buzzwords in international banking are profitability and capital adequacy—and the Japanese are scrambling. Like their compatriots in manufacturing, most Japanese banks have pursued market share at the expense of profits. Nor has Japan's Ministry of Finance required them to maintain capital reserves as large as those of most of their Western competitors.

The Japanese now are beginning to concentrate on profits. They have also agreed to meet by the end of 1992 reserve standards set by the Bank for International Settlements (BIS) in Basel, Switzerland. In both areas they have a way to go. Profits of the largest Japanese banks have declined since the fiscal year ended in March 1989, on which this list is based. And Fuji Bank, for example, the third largest both in Japan and in the world, had a capital-to-assets ratio of roughly 3% for the 1989 fiscal year, well below the BIS standard of 8%.

In the global ocean of banking, the U.S. doesn't make much of a splash. Only 13 American banks made the list, and just three were in the top 50. Citicorp, America's largest with $231 billion in assets, was No. 11. The second largest, Chase Manhattan, ranked 38th.

Nine banks—including six in the U.S.—lost money. Sagging under LDC loans, a slumping real estate market, and the collapse in junk bonds, American banks reported some of the biggest percentage decreases in profits. Bankers Trust New York Corp. (No. 89) was down 251%, and J.P. Morgan (No. 55) had a 227% drop. (Declines in excess of 100% indicate a swing from a profit to a loss.) Each bank set aside nearly $2 billion for credit losses in 1989.

Italy's Banca Nazionale del Lavoro (No. 41) suffered an embarrassing $175 million loss after the discovery last August that its Atlanta branch had made over $2 billion in unauthorized loans to Iraq. In contrast, Banco di Roma (No. 81) was the leader in profit growth, with a 162% increase. Two American banks made the top ten for earnings increases: NCNB (No. 78) had a 77% gain, mainly because it acquired the failed subsidiaries of First RepublicBank in Texas, and BankAmerica (No. 45) reported a 52% increase, making 1989 its most profitable year ever.

West Germany's Deutsche Bank (No. 18) aggressively pursued its global strategy. It acquired Austria's Antoni Hacker & Co. and the British merchant bank Morgan Grenfell, increased investments in banks in Spain and Uruguay, added three new branches in Asia, and opened representative offices in Budapest and Warsaw.

Deutsche Bank is also vying with its smaller West German rivals, Dresdner (No. 28) and Commerzbank (No. 34), for prominence in the united Germany. The bank got a jump on the others last April when it negotiated a joint venture with Kreditbank, the newly formed commercial banking arm of East Germany's central bank. East Germany, along with the other reawakened countries of Eastern Europe, will need tremendous infusions of capital in the next few years, which presents opportunity for all the global banks. **– Nora E. Field**

RANK BY ASSETS 1989	
1	DAI-ICHI KANGYO BANK[6]
2	SUMITOMO BANK[6]
3	FUJI BANK[6]
4	MITSUBISHI BANK[6]
5	SANWA BANK[6]
6	INDUSTRIAL BANK OF JAPAN[6]
7	NORINCHUKIN BANK[6,7]
8	CREDIT AGRICOLE
9	TOKAI BANK[6]
10	BANQUE NATIONALE DE PARIS[5]
11	CITICORP
12	BANK OF TOKYO[6]
13	MITSUBISHI TRUST & BANKING[6,7]
14	MITSUI BANK[6]
15	CRÉDIT LYONNAIS[8]
16	SUMITOMO TRUST & BANKING[6,7]
17	BARCLAYS BANK
18	DEUTSCHE BANK[9]
19	LONG-TERM CREDIT BANK OF JAPAN[6]
20	MITSUI TRUST & BANKING[6,7]
21	NATIONAL WESTMINSTER BANK
22	TAIYO KOBE BANK[6,7]
23	BANK OF CHINA[8]
24	SOCIÉTÉ GÉNÉRALE
25	DAIWA BANK[6,7]
26	YASUDA TRUST & BANKING[6,7]
27	GROUPE DES CAISSES D'ÉPARGNE
28	DRESDNER BANK[9]
29	CIE FINANCIÈRE DE PARIBAS
30	HONGKONG & SHANGHAI BANKING
31	TOYO TRUST & BANKING[6]
32	NIPPON CREDIT BANK[6,7]
33	UNION BANK OF SWITZERLAND[7]
34	COMMERZBANK[9]
35	DEUTSCHE GENOSSENSCHAFTSBANK[9]
36	KYOWA BANK[6,7]
37	ISTITUTO BANCARIO SAN PAOLO DI TORINO[8]
38	CHASE MANHATTAN CORP.
39	SWISS BANK CORP.[7]
40	WESTDEUTSCHE LANDESBANK[8,9]
41	BANCA NAZIONALE DEL LAVORO[8]
42	BAYERISCHE VEREINSBANK[9]
43	SAITAMA BANK[6,7]
44	MIDLAND BANK
45	BANKAMERICA CORP.
46	ROYAL BANK OF CANADA[10]
47	AMSTERDAM-ROTTERDAM BANK
48	LLOYDS BANK
49	SHOKO CHUKIN BANK[6,7,8]
50	BAYERISCHE LANDESBANK[9]

	ASSETS[1]		DEPOSITS[2]		LOANS[3]	NET INCOME[4]	STOCK-HOLDERS' EQUITY[5]	EMPLOYEES	
	$ Millions	Percent change in U.S. dollars	$ Millions	Rank	$ Millions	$ Millions	$ Millions	Number	
JAPAN	413,214.4	8.9	313,457.2	1	219,890.0	1,551.3	10,988.7	18,411	1
JAPAN	407,227.3	12.1	296,940.0	2	205,524.4	1,619.5	10,497.3	16,038	2
JAPAN	397,629.5	10.3	284,485.1	3	207,099.7	1,419.9	10,767.5	15,032	3
JAPAN	380,857.5	9.1	273,375.0	4	198,466.9	1,352.2	10,194.9	14,271	4
JAPAN	373,404.5	12.9	269,885.9	5	210,025.8	1,264.3	9,341.0	13,946	5
JAPAN	292,154.9	7.0	124,326.6	26	156,758.6	652.1	9,261.6	5,253	6
JAPAN	244,902.7	3.8	211,436.6	6	102,481.6	318.1	1,389.2	3,130	7
FRANCE	242,578.3	15.2	211,173.7	7	213,913.6	709.2	10,055.1	73,714	8
JAPAN	238,783.4	4.9	176,158.1	11	130,629.6	498.2	6,179.2	11,865	9
FRANCE	232,024.2	17.8	162,556.0	15	166,897.7	535.6	4,651.5	60,333	10
U.S.	230,643.0	11.1	137,922.0	22	155,383.0	498.0	10,076.0	92,000	11
JAPAN	222,382.7	19.9	150,781.1	18	110,779.7	473.1	4,823.2	17,040	12
JAPAN	221,727.5	6.4	186,545.5	8	99,710.8	604.6	5,150.8	6,288	13
JAPAN	220,363.2	4.3	159,544.2	17	130,045.3	607.9	5,785.3	10,256	14
FRANCE	211,237.4	18.1	167,900.9	12	143,459.1	491.0	6,863.7	61,508	15
JAPAN	207,582.6	13.7	178,496.7	10	106,482.6	573.6	4,707.7	6,759	16
BRITAIN	206,036.0	8.9	167,594.8	13	169,893.8	741.1	10,050.3	116,500	17
W. GERMANY	203,601.1	18.3	183,676.3	9	159,783.8	699.2	8,776.2	56,580	18
JAPAN	196,628.1	6.4	149,730.8	19	126,131.7	412.1	5,503.9	3,488	19
JAPAN	191,573.4	9.5	161,740.0	16	107,702.1	472.0	3,225.8	6,173	20
BRITAIN	187,587.1	5.2	163,469.7	14	161,643.7	326.3	9,603.0	113,000	21
JAPAN	181,773.9	3.6	139,427.0	21	114,551.4	417.3	4,396.8	12,931	22
CHINA	181,543.0	21.0	74,059.9	56	106,583.1	1,356.1	8,365.9	51,000	23
FRANCE	176,213.2	13.4	133,951.7	24	129,554.7	558.7	4,042.8	45,950	24
JAPAN	162,031.9	7.5	84,805.0	39	87,400.7	304.7	3,070.4	8,688	25
JAPAN	160,171.3	(4.6)	132,206.5	25	79,654.4	408.5	3,143.4	5,627	26
FRANCE	151,021.8	8.3	144,315.2	20	68,929.7	456.4	7,880.2	33,000	27
W. GERMANY	147,723.5	13.4	134,995.9	23	120,232.3	334.8	5,516.1	36,898	28
FRANCE	139,003.8	14.3	89,122.8	35	96,775.9	541.1	4,200.7	25,500	29
HONG KONG	132,928.7	17.5	118,588.4	27	97,819.9	612.1	6,746.4	53,375	30
JAPAN	124,616.5	3.1	105,717.9	29	75,416.9	319.8	2,170.2	5,078	31
JAPAN	123,645.9	7.4	97,040.8	31	75,243.3	296.5	2,949.0	2,218	32
SWITZERLAND	114,260.0	3.0	96,066.9	34	96,175.8	551.5	8,179.0	21,210	33
W. GERMANY	113,379.2	11.5	106,343.8	28	92,679.6	298.7	4,062.8	27,631	34
W. GERMANY	110,639.1	48.0	102,701.5	30	87,383.3	118.4	1,808.6	9,597	35
JAPAN	110,168.2	(0.4)	81,354.1	45	67,187.3	281.3	2,737.1	7,925	36
ITALY	107,700.0	31.9	79,641.6	47	51,939.3	477.6	3,707.0	20,407	37
U.S.	107,369.0	10.2	69,073.0	57	73,402.0	(665.0)	4,944.0	41,610	38
SWITZERLAND	105,465.3	2.8	88,032.5	37	88,633.0	458.2	6,174.3	18,349	39
W. GERMANY	105,021.6	12.9	96,842.3	32	82,721.1	182.8	3,106.6	9,652	40
ITALY	104,524.9	14.9	83,892.7	41	76,706.4	(175.0)	5,054.5	26,238	41
W. GERMANY	102,758.7	12.1	96,302.0	33	91,334.9	148.1	2,335.3	14,995	42
JAPAN	102,688.3	10.2	76,278.8	53	58,685.0	226.2	2,608.5	7,848	43
BRITAIN	100,872.3	0.1	88,280.9	36	85,541.1	(359.1)	4,334.9	60,237	44
U.S.	98,764.0	4.3	81,186.0	46	72,488.0	1,103.0	5,534.0	54,779	45
CANADA	97,657.4	8.2	75,961.4	54	70,895.8	444.0	4,924.6	47,989	46
NETHERLANDS	94,168.2	12.1	85,379.1	38	52,930.0	400.5	3,478.1	23,718	47
BRITAIN	92,901.6	(0.9)	84,591.7	40	77,865.7	(960.8)	3,818.3	84,679	48
JAPAN	91,776.8	(1.5)	82,229.0	44	73,649.3	73.4	2,238.6	6,118	49
W. GERMANY	91,301.2	14.2	76,841.3	52	71,874.6	63.7	1,998.5	4,463	50

THE GLOBAL 100

THE WORLD'S BIGGEST COMMERCIAL BANKS

RANK BY ASSETS 1989			ASSETS[1] $ Millions	Percent change in U.S. dollars	DEPOSITS[2] $ Millions	Rank	LOANS[3] $ Millions	NET INCOME[4] $ Millions
51	ALGEMENE BANK NEDERLAND	NETHERLANDS	90,742.5	6.7	79,313.6	48	60,212.7	330.7
52	BAYERISCHE HYPOTHEKEN & WECHSEL	W. GERMANY	90,571.9	18.8	83,853.2	43	79,533.2	147.0
53	RABOBANK	NETHERLANDS	90,347.9	11.9	83,883.7	42	64,751.4	423.6
54	CRÉDIT SUISSE	SWITZERLAND	89,243.3	18.2	74,697.0	55	74,860.5	478.7
55	J.P. MORGAN & CO.	U.S.	88,964.0	6.0	39,158.0	85	26,030.0	(1,275.0)
56	BANCA COMMERCIALE ITALIANA	ITALY	88,839.1	41.9	77,891.6	50	66,068.6	313.9
57	ZENSHINREN BANK	JAPAN	86,321.6	(.6)	77,987.7	49	29,399.1	231.5
58	BANK OF YOKOHAMA	JAPAN	86,172.5	5.8	63,117.1	62	50,416.0	158.5
59	CANADIAN IMPERIAL BANK OF COMMERCE	CANADA	85,352.7	9.9	67,177.0	58	61,776.4	377.6
60	NMB POSTBANK GROUP	NETHERLANDS	84,503.0	95.4	77,774.7	51	55,949.7	310.4
61	WESTPAC BANKING	AUSTRALIA	84,157.6	27.1	41,575.5	83	47,546.6	638.6
62	SECURITY PACIFIC CORP.	U.S.	83,943.0	7.8	52,630.0	70	60,566.0	740.6
63	BANCO DO BRASIL	BRAZIL	82,694.4	3.1	28,706.1	96	56,560.3	390.7
64	CASSA DI RISPARMIO DELLE PROVINCIE LOMBARDE	ITALY	82,329.3	25.9	60,819.1	64	38,088.2	480.4
65	HOKKAIDO TAKUSHOKU BANK	JAPAN	79,685.3	3.9	58,979.1	65	46,597.2	145.8
66	BANK MELLI IRAN	IRAN	78,253.4	7.5	54,311.6	69	25,996.2	15.9
67	MONTE DEI PASCHI DI SIENA	ITALY	76,193.9	23.2	58,588.6	66	39,471.7	167.4
68	CREDITO ITALIANO	ITALY	75,441.3	32.7	65,762.7	60	54,417.3	216.3
69	CHUO TRUST & BANKING	JAPAN	74,990.5	(2.4)	66,352.2	59	44,146.8	108.5
70	CRÉDIT INDUSTRIEL ET COMMERCIAL	FRANCE	74,906.3	18.9	31,664.7	94	34,394.9	161.0
71	CHEMICAL BANKING CORP.	U.S	71,513.0	6.2	50,151.0	72	41,876.0	(482.2)
72	BANCO BILBAO VIZCAYA	SPAIN	70,158.9	12.2	45,634.0	78	32,466.6	815.4
73	NORDDEUTSCHE LANDESBANK	W. GERMANY	69,016.5	11.4	63,861.3	61	60,260.7	44.8
74	BANK OF NOVA SCOTIA	CANADA	68,989.9	12.7	51,890.3	71	45,984.3	186.1
75	GÉNÉRALE DE BANQUE	BELGIUM	68,405.8	9.2	63,072.3	63	48,809.0	65.2
76	BANK OF MONTREAL	CANADA	67,218.1	3.9	56,147.9	67	46,250.5	42.9
77	BANCO DI NAPOLI	ITALY	67,189.0	17.3	54,315.8	68	43,301.3	75.9
78	NCNB CORP.	U.S.	66,190.8	121.8	48,576.3	73	33,943.7	447.1
79	AUSTRALIA & NEW ZEALAND BANKING	AUSTRALIA	65,638.4	13.6	38,399.3	86	35,534.4	283.1
80	GROUPE DES BANQUES POPULAIRES	FRANCE	64,858.3	16.0	41,941.6	81	39,034.1	200.0
81	BANCO DI ROMA	ITALY	64,650.0	18.3	48,500.3	74	41,848.4	117.5
82	MANUFA[illegible]ERS HANOVER CORP.	U.S.	60,479.0	(9.3)	41,994.0	80	39,145.0	(518.0)
83	CHIBA B[illegible]	JAPAN	59,429.9	15.3	47,416.6	75	39,174.7	122.8
84	FIRST INTERSTATE BANCORP	U.S.	59,051.4	1.5	46,467.7	76	36,767.9	(124.5)
85	NATIONAL AUSTRALIA BANK	AUSTRALIA	58,995.6	18.3	32,030.3	93	44,125.3	639.0
86	SKANDINAVISKA ENSKILDA BANKEN	SWEDEN	58,912.4	24.9	34,250.1	91	38,578.9	162.3
87	CRÉDIT MUTUEL	FRANCE	56,633.2	22.1	38,243.9	87	27,447.4	156.1
88	HOKURIKU BANK	JAPAN	55,953.1	15.6	46,033.6	77	36,515.6	126.3
89	BANKERS TRUST NEW YORK CORP.	U.S.	55,658.4	(3.9)	26,220.1	97	18,421.4	(979.9)
90	BANQUE INDOSUEZ	FRANCE	55,449.8	15.2	18,363.9	99	23,214.0	162.2
91	STATE BANK OF INDIA	INDIA	55,054.9	11.1	30,900.7	95	22,019.1	66.8
92	TORONTO-DOMINION BANK	CANADA	53,716.7	10.5	41,889.8	82	41,266.9	582.9
93	JOYO BANK	JAPAN	51,457.1	13.5	43,927.5	79	34,061.2	133.9
94	BANK OF SEOUL	SOUTH KOREA	51,088.2	23.3	13,169.2	100	10,466.4	89.3
95	BANQUE BRUXELLES LAMBERT	BELGIUM	50,492.7	10.3	24,893.9	98	21,764.4	125.1
96	PKBANKEN	SWEDEN	50,282.6	26.5	35,920.6	89	33,861.6	109.3
97	BANK OF NEW YORK CO.	U.S.	48,856.5	3.1	34,927.1	90	34,629.4	50.7
98	WELLS FARGO & CO.	U.S.	46,736.6	4.5	36,430.3	88	40,988.3	601.1
99	FIRST CHICAGO CORP.	U.S.	47,907.0	7.8	32,935.0	92	28,447.0	358.7
100	SHIZUOKA BANK	JAPAN	47,479.2	10.8	40,252.7	84	29,364.6	157.7
	TOTALS		12,497,344.8		9,409,426.0		7,793,308.8	32,472.3

STOCK-HOLDERS' EQUITY $ Millions	EMPLOYEES Number	
3,398.0	31,994	51
2,750.6	13,662	52
5,356.0	34,399	53
4,915.0	17,539	54
4,495.0	14,207	55
3,420.6	20,918	56
1,656.5	972	57
2,569.8	6,596	58
4,126.1	36,466	59
2,590.5	22,697	60
4,923.6	47,525	61
4,637.0	41,099	62
5,502.7	134,301	63
4,325.0	15,338	64
1,771.5	6,469	65
553.4	22,840	66
3,411.5	19,315	67
2,497.4	16,960	68
823.6	4,154	69
1,902.3	26,000	70
3,705.0	29,139	71
4,702.9	32,470	72
1,448.7	6,050	73
2,932.1	29,618	74
3,010.2	16,396	75
3,191.4	33,666	76
975.7	12,930	77
2,961.5	27,002	78
3,101.0	47,009	79
2,568.8	27,435	80
2,081.1	14,435	81
3,381.0	20,034	82
1,872.3	4,724	83
2,339.3	36,000	84
4,398.0	38,000	85
922.1	9,620	86
3,463.8	22,000	87
1,594.4	5,056	88
2,385.7	13,230	89
1,842.9	16,347	90
762.2	288,824	91
3,745.2	23,881	92
1,616.8	4,957	93
1,553.8	9,838	94
1,151.9	12,116	95
862.2	5,127	96
2,764.3	14,883	97
2,860.9	19,500	98
2,692.0	18,158	99
2,008.1	5,299	100
419,939.6	2,866,490	

ASSETS PER EMPLOYEE

THE TEN HIGHEST

	RANK	
ZENSHINREN BANK	57	$88,808,282
NORINCHUKIN BANK	7	78,243,690
LONG-TERM CREDIT BANK	19	56,372,744
NIPPON CREDIT BANK	32	55,746,556
INDUSTRIAL BANK OF JAPAN	6	55,616,780
MITSUBISHI TRUST & BANK	13	35,262,012
MITSUI TRUST & BANKING	20	31,034,084
SUMITOMO TRUST & BANKING	16	30,712,026
YASUDA TRUST & BANKING	26	28,464,774
SANWA BANK	5	26,775,024

THE FIVE LOWEST

NATIONAL AUSTRALIA BANK	85	1,552,517
ANZ BANKING	79	1,396,295
LLOYDS BANK	48	1,097,103
BANCO DO BRASIL	63	615,739
STATE BANK OF INDIA	91	190,617
THE MEDIAN		4,347,602

CHANGE IN NET INCOME

THE TEN BIGGEST INCREASES*

	RANK	
BANCO DI ROMA	81	162.3%
BANK OF SEOUL	94	106.2
NMB POSTBANK GROUP	60	103.8
WESTDEUTSCHE LANDESBANK	40	99.7
NCNB CORP.	78	77.1
SHOKO CHUKIN BANK	49	63.7
SUMITOMO BANK	2	58.2
FUJI BANK	3	57.0
MITSUBISHI BANK	4	54.5
BANKAMERICA CORP.	45	51.9

THE FIVE BIGGEST DECREASES*

BANKERS TRUST N.Y. CORP.	89	251.3%
BANCA NAZIONALE DEL LAVORO	41	246.0
J.P. MORGAN & CO.	55	227.3
FIRST INTERSTATE BANCORP	84	196.2
LLOYDS BANK	48	187.7

*Percent increase or decrease of net income. Listings exclude companies that lost money in 1988.

FOOTNOTES TO THE BANKS

[1] All companies on the list must have more than 80% of their assets in chartered commercial banking institutions. Asset figures for non-U.S. banks have been converted into U.S. dollars using the market rate at each bank's fiscal year-end, which is December 31, 1989 unless otherwise noted. Chuo Trust, Daiwa, Mitsubishi Trust, Mitsui Trust, Sumitomo Trust, Toyo Trust, and Yasuda Trust include holdings of major trusts in their assets.

[2] Deposit figures for non-U.S. banks have been converted into U.S. dollars using the market rate at each bank's fiscal year-end. Figures for West German banks include their own bonds; so do figures for Bank of Tokyo, Industrial Bank of Japan, Long-Term Credit Bank of Japan, Norinchukin Bank, and Shoko Chukin Bank.

[3] Loan figures for non-U.S. banks have been converted into U.S. dollars using the market rate at each bank's fiscal year-end. Figures include lease financing and money at call or available on short notice and are net of loan-loss reserves.

[4] Net income figures for non-U.S. banks have been converted into U.S. dollars using the average rate in the official exchange market during each bank's fiscal year.

[5] Stockholders' equity figures for non-U.S. banks have been converted into U.S. dollars using the market rate at each bank's fiscal year-end. Equity is the sum of capital stock, surplus and retained earnings.

[6] Figures are for fiscal year ended March 31, 1989.

[7] Figures are unconsolidated.

[8] Government owned.

[9] Excludes some some subsidiaries more than 50% owned.

[10] Figures are for fiscal year ended October 31, 1989.

[11] Name changed from NMB Bank (Nederlandsche Middenstandsbank) upon merger with Postbank, October 4, 1989.

[12] Figures are for fiscal year ended September 30, 1989.

[13] Figures for fiscal year ended March 20, 1989.

[14] Figures reflect acquisition of NCNB Texas National Bank (No. 26 on last year's U.S. list), August 9, 1989.

[15] Figure is a FORTUNE estimate.

THE BANKS BY COUNTRY

	1-50	51-100	TOTAL	LARGEST COMPANY	ASSETS $ millions	RANK
AUSTRALIA	0	3	3	WESTPAC BANKING	84,157.6	61
BELGIUM	0	2	2	GÉNÉRALE DE BANQUE	68,405.8	75
BRAZIL	0	1	1	BANCO DO BRASIL	82,694.4	63
BRITAIN	4	0	4	BARCLAYS BANK	206,036.0	17
CANADA	1	4	5	ROYAL BANK OF CANADA	97,657.4	46
CHINA	1	0	1	BANK OF CHINA	181,543.0	23
FRANCE	6	4	10	CRÉDIT AGRICOLE	242,578.3	8
HONG KONG	1	0	1	HONGKONG & SHANGHAI BANKING	132,928.7	30
INDIA	0	1	1	STATE BANK OF INDIA	55,054.9	91
IRAN	0	1	1	BANK MELLI IRAN	78,253.4	66
ITALY	2	6	8	ISTITUTO BANCARIO S. PAOLO TORINO	107,700.0	37
JAPAN	22	8	30	DAI-ICHI KANGYO BANK	413,214.4	1
NETHERLANDS	1	3	4	AMSTERDAM-ROTTERDAM BANK	94,168.2	47
SOUTH KOREA	0	1	1	BANK OF SEOUL	51,088.2	94
SPAIN	0	1	1	BANCO BILBAO VIZCAYA	70,158.9	72
SWEDEN	0	2	2	SKANDINAVISKA ENSKILDA BANKEN	58,912.4	86
SWITZERLAND	2	1	3	UNION BANK OF SWITZERLAND	114,260.0	33
U.S.	3	10	13	CITICORP	230,643.0	11
W. GERMANY	7	2	9	DEUTSCHE BANK	203,601.1	18

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DAIWA BANK	25
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DRESDNER BANK	28
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FIRST INTERSTATE BANCORP	84
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GROUPE DES BANQUES POPULAIRES	80
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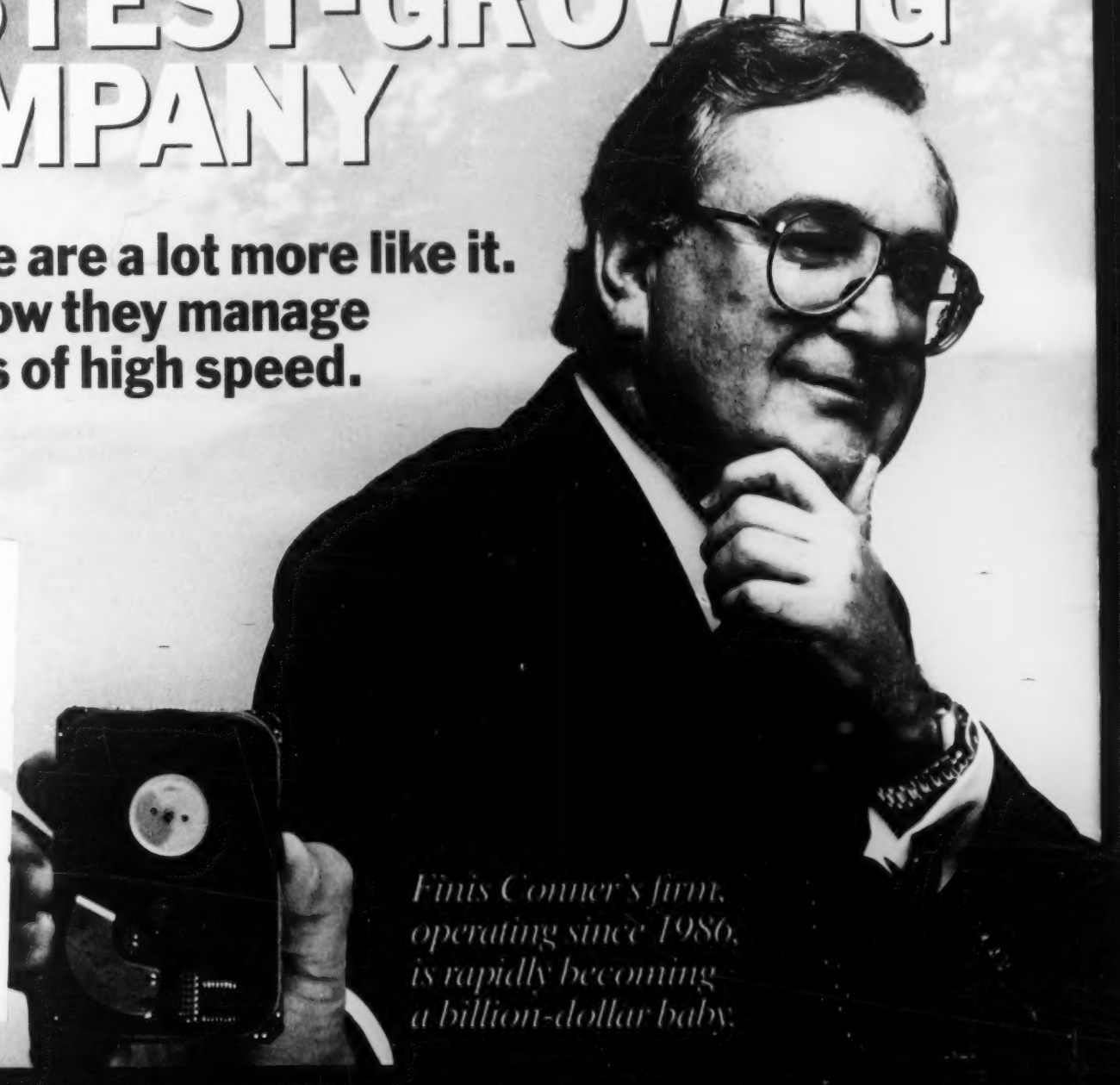
FORTUNE

AMERICA'S FASTEST-GROWING COMPANY

And there are a lot more like it. Here's how they manage the perils of high speed.



Finis Conner's firm, operating since 1986, is rapidly becoming a billion-dollar baby.

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VOL. 122, NO. 4

FORTUNE

ABOVE: R. Ian Lloyd shot a "clean room" at Conner Peripherals Singapore.

COVER: CEO Finis Conner with a hard disk drive. Photo by David Strick (Onyx).

"At Conner we live dog-years. We have to do in six months what other companies do in years."

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CORPORATE PERFORMANCE/Cover

AMERICA'S FASTEST-GROWING COMPANY 48

Disk drive maker Conner Peripherals keeps rivals at bay with shrewd marketing and nonstop innovation. *by Andrew Kupfer*

AVOIDING GROWTH'S PERILS 55

Rapidly expanding businesses must cross three hurdles. *by William E. Sheeline*

MONEY & MARKETS

THE GREAT S&L FIRE SALE OF 1990 60

Horse farms, truck stops, golf courses, churches: The Resolution Trust Corp., which Congress created to dispose of failed savings and loans, has amassed a multibillion-dollar grab bag of assets. Using an auctioneer's gavel, the government will chip away at the $130 billion cost of the thrift bailout. Whatever it can't sell, the taxpayer will have to buy. *by John Davidson and Erik Calonius*

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COKE GETS OFF ITS CAN IN EUROPE 68

The Atlanta powerhouse figures that's where the greatest promise is in the Nineties. So it has adopted a risky new strategy that should interest every Euromarketer. *by Patricia Sellers*

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DONALD TRUMP JUST WON'T DIE 75

By rights this overextended erstwhile billionaire should be bankrupt by now, but his artful deal with his banks—70 of them—makes the Donald look like a survivor. *by Stratford P. Sherman*

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Today's crushed soda bottles may turn into tomorrow's sleek surfboards, as a plucky new industry begins to transform the nation's trash. Your garbage could be next. *by Peter Nulty*

"The likelihood of a near-term recession seems low."

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"Everybody is afraid of the new, very aggressive policy of the Coca-Cola Co."

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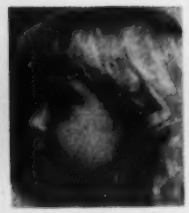
"I said to the bankers, 'Listen, fellows, if I have a problem, then you have a problem.' "

PAGE 75

"I looked at owning the A's as a way to go to the ballpark every day and not be considered a bum."

PAGE 93



"We want to make it really hard for our daughters to give their kids a better childhood than they will have had."

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"People don't know if you're really going to prison, so they don't like to make long-term plans."

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The Japanese company best known for its stereos and car radios spent 13 years cultivating an obscure and frustrating technology—laser video players—before reaping a payoff. The wait was worth it. Just ask Madonna. *by Brian O'Reilly*

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Doggedly employing market research techniques that made Levi Strauss an apparel powerhouse, a team of young executives turned baseball's sorriest club, the Oakland A's, into world champs—and a business worth $100 million. It's a story to inspire any manager. *by Brenton R. Schlender*

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Getting ahead is harder than it used to be, but Americans are persevering. The majority have more money and more choices than ever. In this composite, FORTUNE traces a wide-ranging map of the trends. Eight representative families and individuals show how this new, bigger, more diverse middle class is fulfilling its aspirations and weathering its tribulations. *by Louis S. Richman*

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You can learn a lot from the soon-to-be-departed, but only if you question them adroitly. Interviewees, watch what you say. *by Walter Kiechel III*

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Flunking the Labor Department, saying "Huh?" to Bush, tense moments at CBS, hurray for yuppies, and other matters. *by Daniel Seligman*

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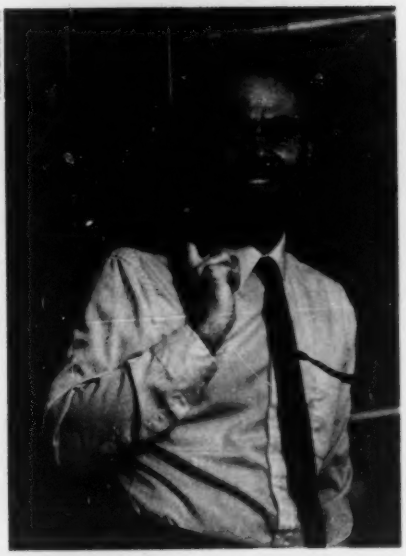


NINA BARNETT (2)

Andrew Kupfer: appraising fast growth

WELCOME to our summer smorgasbord of stories, a notably varied and typically rewarding issue of FORTUNE. If you want to know how America's fastest-growing big company does it, how Donald Trump is really faring, how a noted business family has used innovative management to turn a major league baseball team into a box office winner, and why the U.S. middle class may be better off than you think—read on.

We start with a revealing cover story on the country's hottest growth company—Conner Peripherals, which stands to sell more than a billion dollars' worth of computer disk drives this year—and its temperamental, up-from-the-ground-floor founder, Finis Conner. Writer Andrew Kupfer went through the company from top to bottom and discovered Conner's keys to creating such rapid success (see page 48). In an accompanying story, reporter William Sheeline identifies the fastest-expanding companies in the FORTUNE 500 lists.

Our tour guide through the overleveraged empire of Donald Trump is writer Stratford Sherman, who appraises Trump as "a wilder mix of brilliance and flat-footedness" than most people imagine. But while the erstwhile billionaire's bankers have wised up about what they euphemistically call their "undersecured" loans, Sherman finds the prognosis for "the Donald" relatively promising (see page 75).

Coca-Cola's aggressive new approach to selling in Europe may hold lessons for any business person interested in globalism (see page 68). Writer Patricia Sellers traveled all over the Continent and was everywhere amazed by the entrepreneurial spirit of Coke's distributors. Says Sellers, who has covered the company for six years: "I already was aware of how Coke's marketers had created the best-known product in the world, but I didn't realize how unrelenting its people are in selling right there in the grocery store, especially in new markets like East Germany."

Selling is also a specialty of Walter A. Haas Jr., patriarch of the family that controls Levi Strauss and, since 1980, the increasingly proud owner of the Oakland Athletics. Writer Brent Schlender, our multi-award-winning computer industry expert, sallied to Oakland to learn how Haas and crew have cured the sickest club in baseball. Attendance for 1990 could hit three million, ten times what it was in 1979. On page 93 you'll read about Haas's innovative marketing tools: the Clean Team, Crayola Corner, and something called Dot Racing.

Patricia Sellers: examining Coke's strategy

Marshall Loeb
MANAGING EDITOR

FORTUNE (ISSN 0015-8259). Published biweekly, with three issues in October, by The Time Inc. Magazine Company. Principal office: Time & Life Building, Rockefeller Center, New York, NY 10020-1393. Reginald K. Brack Jr., President; Joseph A. Ripp, Treasurer; Harry M. Johnston, Secretary. Subscriptions: U.S., possessions: one year (27 issues) $49.95; Canada: one year (27 issues) $54.00. Second-class postage paid at New York, NY, and at additional mailing offices. Authorized as second-class mail by the Post Office Dept., Ottawa, Canada, and for payment of postage in cash. Member, Audit Bureau of Circulations. POSTMASTER: Send address changes to FORTUNE, P.O. Box 30604, Tampa, Fla. 33630-0604. Customer inquiries: FORTUNE, P.O. Box 60001, Tampa, Fla. 33660-0001. Phone: 1-800-621-8000. © 1990 The Time Inc. Magazine Company. All rights reserved. FORTUNE is a registered mark of The Time Inc. Magazine Company. **For subscription queries, call Customer Service at 1-800-621-8000.**

coddled, consumers pay inflated prices—and free international trade is at risk.

The Bush Administration is pushing hard to end such price supports, but won't act unilaterally. Japan may be mellowing on protection for its rice farmers, but the Europeans seem intransigent. Reaching some kind of settlement on agriculture is on top of the agenda for representatives of the 97 member countries of the General Agreement on Tariffs and Trade who are meeting in Geneva. Says U.S. Trade Representative Carla Hills: "This is the broadest, most complicated, most difficult treaty in the history of GATT."

Failing agreement on agriculture, some GATT members are likely to continue making it tough for industries that eye the whole world as a market. Likely victims: pharmaceutical companies, banks, and makers of software. **– Lee Smith**

EXXON: 'SO LONG, NEW YORK'

■ What will the world's biggest oil company take with it in the August move of its corporate headquarters from New York City to Dallas? Answer (in part): 1,637 chairs, 331 desks, 651 file cabinets, 56 sofas, 66 credenzas—and 200 of its 300 headquarters employees.

Exxon pulled out all the stops when it came to wooing everybody from executives on down, including administrative assistant Rhoda Green (see photo). In addition to providing such usual things as house-hunting trips and career counseling for spouses, the company hired the **Relocation Center** of Irving, Texas, a firm that helps corporations settle in the Dallas–Fort Worth area. Other clients: subsidiaries of **GTE, Occidental Petroleum,** and **PepsiCo**. Exxon is moving into temporary headquarters until a new building—price undisclosed—is finished in 1993.

Relocation Center guides accompanied skeptical Exxon employees during three-day orientation trips and extolled such Texan virtues as good Mexican restaurants and cowboy boots. In a slide show to employees, they flashed the October 23, 1989, issue of FORTUNE that declared Dallas and Fort Worth to be the best area for business in the U.S. For the cultural-minded, the guides set up a private tour of the Dallas Museum of Art. Says Relocation Center President Larry Powers: "The museum, with its Edouard Manet and Jackson Pollock paintings, made a big impression on the Exxon employees. Many had previously viewed this region as a vast cultural wasteland." **– M.A.**

MARK PRESTON

Rhoda Green liked Dallas and will move.

TOP VACATION PASTIMES

MARIA G. KEEHAN

ACTIVITY	POPULARITY SCORES
Swimming	39%
Sunbathing	19%
Fishing	10%
Camping	8%
Hiking	8%
Aerobics, jogging	6%
Bird watching	6%
Miniature golf	5%
Bicycling	4%
Powerboating	3%
Golf	3%

■ Bird watching twice as popular as golf? That's what 18,400 Americans told **Longwoods International**, a Toronto research firm, when asked how they unwind while on vacation. See above for how other pastimes rank.

SHORT PEOPLE GET THE LAST LAUGH

■ After studying diverse groups—baseball players, U.S. Presidents, and cadavers at the Cuyahoga County morgue in Cleveland—Dennis Miller, an economics professor at Baldwin-Wallace College in Ohio, finds that the shorter you are the longer you'll live.

Let's talk baseball. Miller says that 6-foot players tended to die at 73, whereas those standing 5 foot 8 lived to 82. Some 5-foot-8-ers did even better: Bobby Wallace, a Hall of Famer who played from 1894 to 1918, mostly for the St. Louis Browns, made it to 87. Some 6-footers fell short of the lifetime average. Yankee slugger Babe Ruth (60 home runs in one season) was 6 feet 2 inches tall and died at 53. Roger Maris (61 home runs for the Yankees in a longer season and 6 feet tall) died at 51.

Miller doesn't pretend to know why shorter means longer but is "groping for hypotheses," he says. Example: Taller people require more calories, which stimulates hormone production, which in turn may trigger growth of cancer cells.

This actuarial theory seems to be news to the life insurance industry. Says Uwe Aldag, a researcher at the American Council of Life Insurance, a trade group: "I've never heard of any data that correlates height and life expectancy."

So what does all this mean to Miller the economist? Maybe tall people pay too much in Social Security taxes and other pension funds, considering what they'll ultimately collect. Short people get a better deal.

Miller, incidentally, is 40 and 5 foot 9. By his calculation, he'll live to 81. **– Joseph Spiers**

NOW HEAR THIS

■ **NEIL BUSH,** 35, the President's son, on the possibility of having to defend himself against government conflict-of-interest charges involving his directorship of Silverado, a bankrupt S&L:
"It's an awesome thought to have to face the federal government. It's like a high school football team playing the Broncos."

■ **ROBERT POLLARD,** 50, nuclear safety engineer with the Union of Concerned Scientists, on the new generation of nuclear reactors:
"There's no question that it's possible to design reactors that are safer. It's also possible to design a reactor that is economically competitive. I'm not yet convinced you can do both."

■ **BRENT SCOWCROFT,** 65, National Security Adviser, answering a reporter:
"That's a good question, and let me state the problem more clearly without going too deeply into the answer."

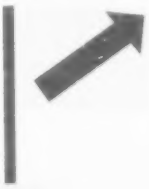
AVOIDING GROWTH'S PERILS

Rapidly expanding businesses must cross three hurdles. And sometimes it pays to slow down. ■ *by William E. Sheeline*

THE REAL CHALLENGES of rapid growth come when a company hits its first rough stretch of highway. The fast lane is paved with the wreckage of businesses that failed to spot hazards in time. Every company that appears on the list below got there by expanding at extraordinary rates—and dodging potholes—over the past five years. The list excludes spinoffs from established companies, businesses whose growth was largely the result of a single acquisition, and those like Conner Peripherals with fewer than five years of operating history.

Top-ranked Sun Microsystems, like a handful of other companies that appear, won its place by staking out a claim in that realm of perpetual growth, electronics. Others, like Mark IV Industries, are manufacturing miniconglomerates that built themselves up with numerous acquisitions. Still others, like Anacomp, a microfilm producer, and Costco Wholesale, a warehouse club chain, uncovered big opportunities in market niches.

Sun Microsystems' joy ride was interrupted last year when it hit a $20 million quarterly loss, the first deficit in more than five years. With its hugely successful line of computer workstations for engineers, the eight-year-old high-tech *Wunderkind* has grown at a bugs-on-



25 OF AMERICA'S FASTEST-GROWING COMPANIES

COMPANY* HEADQUARTERS	PRINCIPAL BUSINESS	SALES in millions of dollars 1984	SALES in millions of dollars 1989	GROWTH RATE annual avg. 1984-89
SUN MICROSYSTEMS Mountain View, Calif.	Computers	$39	$1,769	114%
COSTCO WHOLESALE Kirkland, Wash.	Warehouse clubs	$102	$3,000	97%
REEBOK INTERNATIONAL Stoughton, Mass.	Shoes	$66	$1,835	94%
MARK IV INDUSTRIES Amherst, N.Y.	Automobile power trains and audio products	$35	$742	84%
JWP Purchase, N.Y.	Information and building-management systems	$90	$1,742	81%
SUDBURY Cleveland	Castings and other auto parts	$50	$627	66%
COMPUTER ASSOCIATES Garden City, N.Y.	Computer software	$85	$1,030	65%
ITEL Chicago	Electrical and communications wiring	$195	$2,121	61%
HARVARD INDUSTRIES Farmingdale, N.J.	Rearview mirrors and other auto parts	$72	$758	60%
WESTERN DIGITAL Irvine, Calif.	Semiconductors	$113	$994	54%
COMPAQ COMPUTER Houston	Computers	$329	$2,876	54%
DANAHER Washington, D.C.	Hand tools	$91	$756	53%
TELE-COMMUNICATIONS Denver	Cable TV systems and programming	$449	$3,026	46%
LSI LOGIC Milpitas, Calif.	Semiconductors	$84	$547	45%
HOME DEPOT Atlanta	Building supply stores	$433	$2,772	45%
ALLEGHANY New York City	Title insurance	$195	$1,074	41%
INTERFACE LaGrange, Ga.	Carpet tiles	$107	$582	40%
ANACOMP Indianapolis	Microfilm and microfilm equipment	$132	$710	40%
J.B. HUNT TRANSPORT Lowell, Ark.	Trucking	$98	$509	39%
BANNER INDUSTRIES Beachwood, Ohio	Aviation fasteners and other aerospace parts	$113	$579	39%
PROGRESSIVE Mayfield Heights, Ohio	Property-casualty insurance	$282	$1,393	38%
MAYTAG Newton, Iowa	Home appliances	$643	$3,089	37%
BASF Parsippany, N.J.	Chemicals	$1,185	$5,422	36%
MORGAN STANLEY GROUP New York City	Investment banking	$1,340	$5,831	34%
PRICE San Diego	Warehouse clubs	$1,164	$5,033	34%

*List excludes spinoffs from established companies and companies that owe their growth to a single acquisition.

the-windshield annual clip of 114%. But a spate of problems appeared last year when Sun introduced a new series of products. Component shortages delayed delivery of the machines; a senior executive quit, citing differences over strategy; and a newly installed management information system malfunctioned, throwing Sun's accounting into disarray.

In growth-speak, Sun was suffering "product transition syndrome," an ailment that afflicts many young organizations as they try to broaden their scope. Chief Executive Scott McNealy responded by imposing cost controls and streamlining Sun's organization, which had proliferated willy-nilly. The remedy worked: According to analysts' estimates, Sun finished its 1990 fiscal year in June with sales up 39% to $2.4 billion, and profits up 89% to $115 million.

William Sommers, a consultant with the Booz Allen firm, recently studied 35 high-growth technology companies and found that almost all had weathered at least one severe change of fortune. In Sommers's analysis, the typical growth company encounters three hurdles. It must manage its own rapid expansion; defend against competitors trying to horn in on its success; and grow beyond its initial product or market. "We couldn't find any companies that successfully addressed all three challenges simultaneously," he says. "If your strategic plan says to do all three, forget it. Back off, and concentrate on one or two of them." Other admonitions for managers coping with fast growth:

■ **Stick to your knitting.** For years Progressive, a property and casualty insurer, has expanded and earned above-average profits by writing policies for drivers other companies won't touch. Progressive succeeds with the help of a database it has developed on the personalities, lifestyles and driving habits of high-risk groups. By differentiating between, say, bartenders and rock musicians, the company can price policies to match the underwriting risk. But Progressive ran into trouble in 1988 after a plunge into trucking and transportation insurance. "We thought we were better than we really were," says CEO Peter B. Lewis, 56. "We jumped into a new market and put on too much business too fast—our organization and support systems couldn't handle it."

By contrast, the list's miniconglomerates seem to thrive by acquiring companies and moving into new fields. Mark IV Industries' 32 divisions manufacture a huge array of products, from child-resistant pill bottles to smoke detectors. But the company has a unifying principle. As the founder and chairman, Sal Alfiero, 52, explains, the idea is to embrace diversity, yet avoid reckless diversification: "We're a manufacturing company, and we would not stray from that."

■ **Beware of overleveraging.** In the 1980s companies looking to grow by acquisition often fortified themselves with junk bonds. Today those financial steroids are no longer in ready supply, and it's tougher to turn around and sell the assets of acquired companies. "You have to avoid operating in the 1990s with a 1980s mentality," says Alfiero. Last year Sudbury, another miniconglomerate with 24 units making metal, plastic, and rubber products, realized that it had taken on too much debt. Rising steel prices forced up its costs, and heavy interest expenses pushed it into the red. Now Sudbury is selling assets, its growth days apparently over.

Sun Microsystems' new automated warehouse in Milpitas, California

■ **Communicate company values.** Hiring employees by the thousand and inculcating them with the corporate mission is a huge challenge. At Progressive, which doubled its work force with 2,600 new hires in 1986 and 1987, a training program drums in watchwords like integrity, aspiration, excellence, respect for all people, and profit. Says Chairman Lewis: "We make a constant effort to reward people who understand our values and objectives, and to cull those who do not." He really means it: Turnover in Progressive's work force in 1987 was 21%.

Morgan Stanley conveys its values by osmosis. The investment bank went public in 1986 and has doubled its number of employees, to 6,800, but management works hard to maintain what analyst Perrin Long of Lipper Analytical calls "the culture of a partnership." Individual executives have broad latitude to make decisions, quick access to senior managers, and, typically, a personal stake in the business, which is nearly 60% employee owned. Such qualities have helped Morgan Stanley to multiply its profits sevenfold in the past five years, and to avoid gambits such as high-risk bridge loans that are now haunting other Wall Street firms.

■ **When possible, pause.** Prudence sometimes dictates easing back on the corporate throttle to give employees and internal systems time to adjust. "When you're growing very fast, you can't afford to outdistance your management," says Jim Sinegal, CEO of Costco Wholesale. His Seattle-based chain of warehouse clubs went public with 20 stores in 1985 and now has 62. Three years ago investors urged the company to expand into the Northeast, but Sinegal refused. "We didn't have the people to do it," he says. Recently the company set up a senior manager and staff in Boston, and is now ready to open some New England stores.

At Progressive, periodic slowdowns are built into the strategy. "Our growth follows a step pattern," says CEO Lewis. "We will grow faster than our targeted rates for a while, then we will slow down or stop. Right now we're on the top part of the step. That's the time you identify honestly what you screwed up, and you fix it."

Not every growth company can afford the luxury of a pause: Booming markets often don't allow it. For Sun, a workstation order passed up may mean a customer permanently lost to Hewlett-Packard or IBM. So when problems arise, they must be fixed on the fly. That led to harrowing weeks last year during which McNealy and his colleagues worked virtually around the clock. Still, the 35-year-old chief executive notes philosophically, "My worst day growing is better than my best day not growing." ■

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THE 25 YEAR OLDS

Today's young managers
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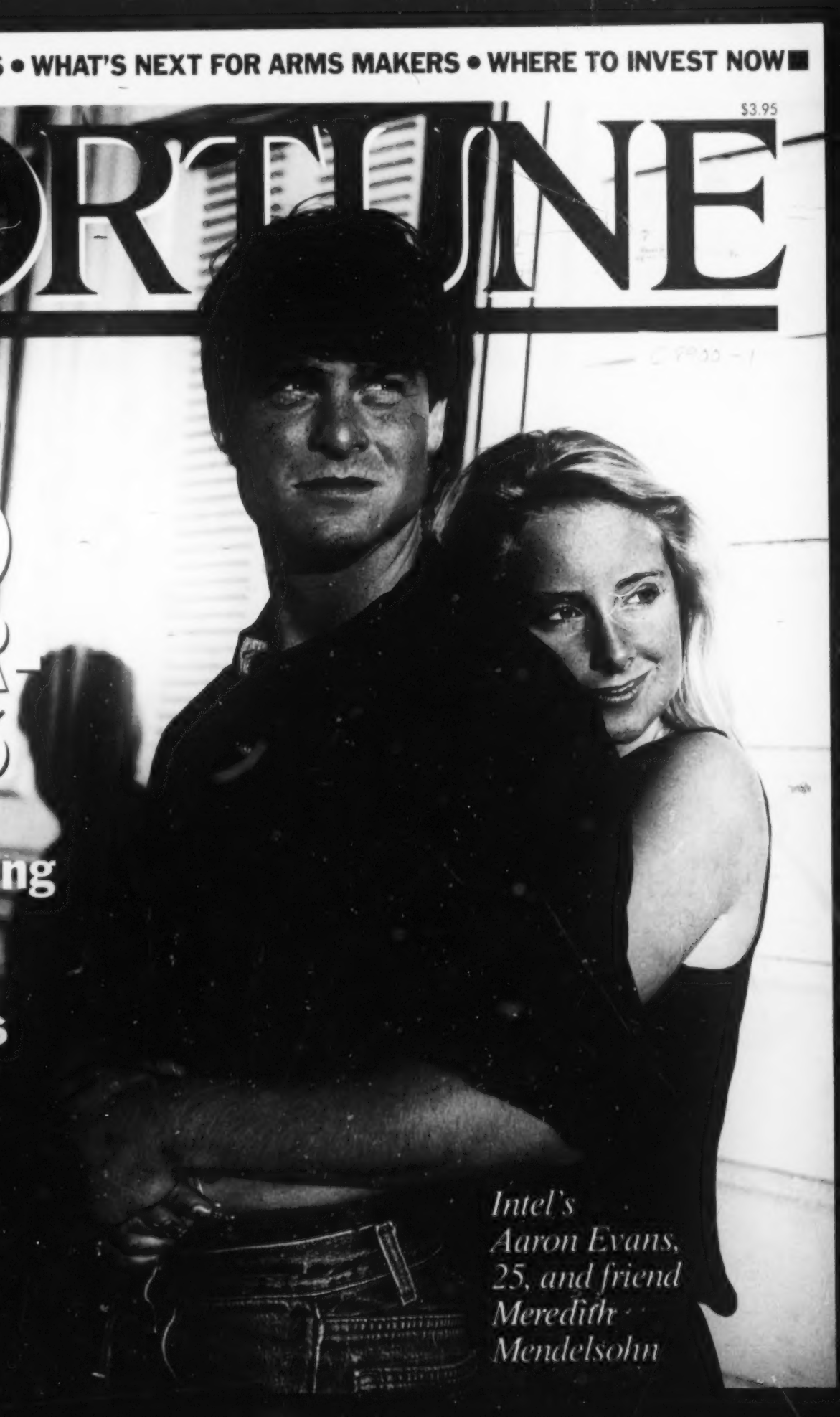

Intel's Aaron Evans, 25, and friend Meredith Mendelsohn

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FORTUNE

"The older managers think that if the shoe doesn't fit, you should wear it and walk funny. The baby-busters say to throw it out and get a new shoe." PAGE 42

ABOVE: Tim Connell, a Georgia-Pacific manager, with his wife, Lisa. Photograph by Alen MacWeeney.

COVER: MacWeeney also took this shot of Evans, a microelectronics salesman, and Mendelsohn.

MANAGING/Cover Story

WHAT 25-YEAR-OLDS WANT 42

Here come the baby-busters, and they are nothing like the workaholic yuppies who preceded them. The new crew have been known to turn down big promotions or to quickly acquire clout and then give it all up for leisure. Young, well-trained recruits are in short supply now, and the world should be their oyster. Meet the Employees Who *Can* Say No. *by Alan Deutschman*

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The combative Hugh McColl has built NCNB into the biggest bank in the Lone Star State and the sixth largest in the whole U.S. He's smart, he's bold, and he's the Resolution Trust Corp.'s best customer. *by Gary Hector*

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"Loyalty is not a character flaw."

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"Defense contractors that aren't marketing oriented are going to find themselves on the outside looking in."

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"He'll plant 50-foot palm trees. The rest of us buy 20-foot palms and hope they'll grow."

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"Right now, I know more about drinking Pepsi than I do about running it. But that will change fast."

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"The S&L debacle may be only a prelude to a far larger crisis in American financial institutions."

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No one else in North America controls a single property of such vast size and potential: 100 square miles of mostly raw land sitting squarely in the path of Los Angeles' southward sprawl. Worth $2 billion now, Donald Bren promises to keep his wealth climbing with his "build and hold" strategy. *by Gary Hector*

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EDITOR'S DESK

JAKE WYMAN

Cover story author Alan Deutschman (top left) and FORTUNE staffers who are 25 or less

HENRY LUCE was only 24 and Britton Hadden barely 25 when those two daring Yale grads first published *Time*—and launched our parent company in 1923. So we at FORTUNE have a special respect for what people can accomplish at that early age. Just consider the many companies started by visionaries 25 and under: Apple Computer, R.J. Reynolds, Sears Roebuck, Grey Advertising, Microsoft, Hallmark—and more.

JIM KOMENICH

Writer Gary Hector

Right now, the 25-year-olds are the cutting edge of a new generation: the baby-busters. And as our reporter Alan Deutschman, himself 25, discovered after weeks of interviewing them, they are "profoundly different" from the yuppies of the baby boom. No longer is careerism king: Independence and self-fulfillment have replaced that Eighties obsession. As smart young workers become one of our scarcest resources, today's executives would be wise to understand them. Step one: See our cover story on page 42.

Also in this issue, our prolific associate editor Gary Hector corrals two of America's most successful business leaders. First he tells how a tough Marine from North Carolina named Hugh McColl lassoed the largest bank in Texas and is building a herd to rival the national big boys. Then, in the real estate arena, Hector profiles billionaire developer Donald Bren, who is reshaping a large part of Southern California. Although McColl and Bren are both hard to pin down for interviews, Hector got them. He started talking with Bren last year and even followed him over a six-foot chain-link fence to get the scoop. For an inside perspective on folks who will mold tomorrow's world of business, read on.

Marshall Loeb

MANAGING EDITOR

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THE ARMS MAKERS' NEXT BATTLE

Still facing budget cuts and foreign competition, U.S. defense contractors are learning to fight enemies they should have taken on years ago: mismanagement and waste. ■ *by Nancy J. Perry*

THE LONG-TERM future is dark for defense contractors—but don't expect the big guns to admit it. "We're one of the strongest companies in terms of programs with high national priority," says Lockheed Chairman Daniel M. Tellep. "Because of the programs we're in and not in, we have a particularly good chance," says Grumman Chairman Renso L. Caporali. "General Dynamics has positioned itself in the heartland programs of all three services," says Chairman Stanley C. Pace.

The latest crisis in the Middle East is the only bracing news these guys have had in months. Within 48 hours after Iraq invaded Kuwait, defense stocks had risen 5%, and Congress was reconsidering previous plans to cut the military budget. Certainly the U.S. will need strong, mobile defenses to fend off the dangers of a post–Cold War world. But most of the cuts will still be made.

And with too many companies chasing too few programs, somebody will have to go. That somebody, the contractors say, is somebody else. Observes Under Secretary of Defense John Betti: "They are going through the first stages of competition shock. It's like the five stages of death. The first is disbelief."

Shrinking worldwide defense budgets, increased competition abroad, tougher government procurement policies, and the unnerving loss of a well-defined superpower enemy are rocking the defense industry like a barrage of multiwarhead missiles. To survive, contractors are learning to drop a few bombs of their own: laying off thousands of employees, closing underutilized plants, refusing to bid on unprofitable contracts, and becoming pickier about their own suppliers.

In the battle for market share that is heating up around the globe, the most efficient, highest-quality defense contractors will have the edge. The days of "bidding bellybuttons"—inflating job costs to cover the number of employees on the payroll—are over. Says John D. Rittenhouse, senior vice president of GE Aerospace: "In the future companies that focus on cost and performance will be around. Those that don't, won't. The basic principles of free enterprise are at work, and there's nothing wrong with that."

Farsighted companies are getting in fighting form now—before the big weapons chill sets in. In Defense Secretary Richard Cheney's fiscal 1991 budget request, money for procurement, research, development, testing, and evaluation—the part of the defense budget that most directly affects the industry—is down 6% in real terms, to $116 billion. On the day after the invasion of Kuwait, President Bush reaffirmed the Pentagon's proposal to cut the armed forces by 25% over five years.

The impact of these reductions will not be felt immediately. Contractors are still living off a $257 billion backlog of orders for which money has already been appropriated. Also, Washington being Washington, it is far from clear which weapons systems will be canceled. In his fiscal 1990 budget request, Cheney eliminated funding for 12 Grumman F-14D Navy fighters. Congress not only restored them but added another six, with the proviso that the program be terminated in 1991. Such wrangling—which

MARK RICHARDS—SIPA

For some military airplane makers the future rides on the Advanced Tactical Fighter. Above: Northrop's version.

McDonnell's Long Beach, California, factory can make 29 C-17s a year. Total order so far: six.

stands to increase as a result of the Middle East crisis—gives companies time to regroup.

Or rather it gives them *more* time. Defense executives have long been aware that the business is nosing downward. Since 1985, the peak year of the Reagan buildup, budget authorization for procurement, research, testing, development, and evaluation has dropped on average 4.5% a year in real terms. Over the next few years production will slow down or stop on major weapons programs such as General Dynamics' M-1 tank and F-16 fighter plane, McDonnell Douglas's F-15 fighter, Grumman's F-14D fighter and A-6 attack bomber, and Lockheed's F-117 Stealth fighter.

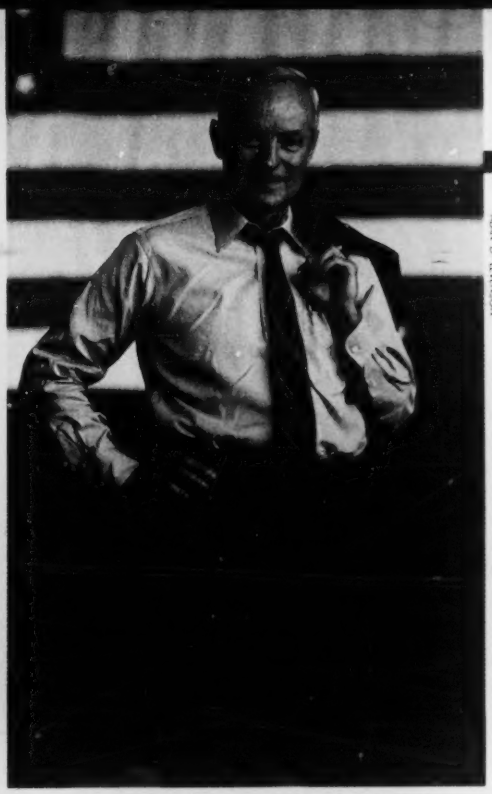
Despite the early warning, most weapons makers have not spent recent years transforming themselves into lean, mean fighting machines. Instead, they've been on the defensive, squabbling with Uncle Sam about a series of tax and procurement reforms that they say have hurt worse than budget cuts. The most onerous was the initiation in the early 1980s of so-called fixed-price development contracts. Unlike the lucrative cost-plus contracts of the past, these pay a set price regardless of how high expenses rise. In efforts to tap the Pentagon's dwindling reservoir of new, big-ticket weapons programs, contractors grossly underestimated the cost of development, bid low—and soon had billions of dollars of write-offs to show for it.

They also wound up with something else: a huge residue of debt. Bear Stearns reports that from 1986 to 1989 industrywide interest expense doubled to $1.7 billion annually. Part of that reflects heavy investments in plant and equipment during the Reagan years. But the Defense Department admits it is partly to blame. Says Betti: "The government has made inappropriate use of fixed-price development contracts by putting the risk on the supplier." The Pentagon will go back to the cost-plus model on some of its new contracts.

DEFENSE COMPANIES are now on the offensive in a war they should have been fighting all along—the campaign against mismanagement, shoddiness, and waste. "We need to do better," says McDonnell Douglas Chairman John McDonnell. Observes Rob-

REPORTER ASSOCIATES *Shelley Neumeier and Charlotte Faltermayer*

CRAIG MOLENHOUSE



ALAN D. LEVENSON

Lockheed's Tellep wants to operate airports.

ert Paulson, head of McKinsey & Co.'s worldwide defense practice: "There are proactive steps that companies can take to be players in the year 2000." Here's how weapons makers are girding for the new era:

■ **PICKING PRIORITY PROGRAMS.** This is easier said than done, for two reasons. One, there is no longer a consensus on who, or how dangerous, the enemy is. The defense industry, for all its radarscopes, is embarrassingly short on vision. Two, even if companies could figure out what to make, General Dynamics couldn't simply turn its M-1 tank factory into an assembly line for target drones. Says Boeing Chairman Frank Shrontz: "All companies are victims of where they happen to be at this point in time."

The future of the biggest prime contractors and their suppliers depends largely on the fate of four major new procurement programs—together valued at more than $200 billion—that are under congressional scrutiny. They are Northrop's B-2 Stealth bomber, the McDonnell Douglas C-17 military transport plane, the McDonnell Douglas–General Dynamics A-12 attack bomber, and the Advanced Tactical Fighter, for which contractors have yet to be chosen. Industry experts predict that at least one prime contractor will leave the overcrowded military airframe business by the end of the decade—probably Grumman, Northrop, or Lockheed.

Which company pushes the eject button could depend largely on the race for the Advanced Tactical Fighter contract, which could be worth more than $55 billion over the next 20 years. Two teams are competing: Northrop and McDonnell Douglas vs. Lockheed, Boeing, and General Dynamics. The winning design will be chosen in a fly-off pitting prototype against prototype next April.

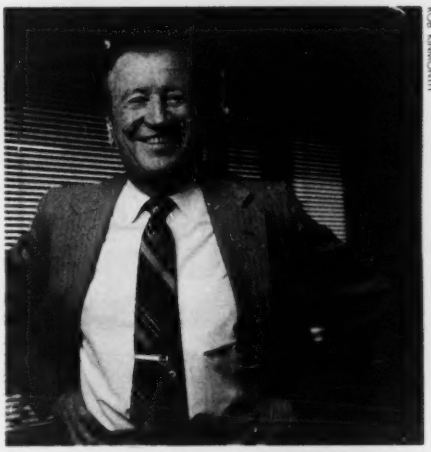
If Lockheed's team loses, the company will likely jettison its money-losing plane-building operation and concentrate on missiles and space, which contribute half of Lockheed's $10 billion in sales and practically all its profits. A smaller Lockheed might be open to a merger—perhaps with a company such as teammate General Dynamics, which has a strong balance sheet and wants to stay in the defense game. CEO Pace says General Dynamics is sizing up prospects but won't make any acquisition decisions until it sees which programs survive the next few years: "It is very risky to acquire now. You could win big or lose big."

If the other team in the ATF competition loses and the B-2 bomber also is killed, $5.2-billion-a-year Northrop could implode. Chairman Kent Kresa says his company has no plan for what it will do if it loses both contracts. But he speculates that it could carry on making airplane parts and electronic systems—on the scale of perhaps $3 billion a year. Potential buyers for such a company: Boeing, which wants to stay in defense as a way of hedging against the ups and downs of the commercial airliner business, and Rockwell International, a company that could use Northrop's technology to complement its own electronics business.

If nobody captures the ATF contract—if the project is killed or delayed—the winners will be McDonnell Douglas and Grumman,

ALAN D. LEVENSON

Northrop's Kresa is banking on the B-2 bomber.



ROB KINGHORN

Pace says General Dynamics will stick to defense.

which make the fighter jets that the ATF is meant to replace.

Defense contractors have been searching, largely without success, for havens free of competition. Many expanded into defense electronics, for instance, on the theory that as the Pentagon buys fewer ships, planes, and tanks, it will pay to upgrade systems on the ones it has. While a safer bet than trying to market aircraft carriers, the strategy has not paid off as well as expected. Lockheed, for example, has been frustrated by the lackluster growth of its 1986 electronics acquisition, Sanders Associates. A shakeout in

McDonnell plans to fire up to 17,000 workers.

KEITH SKELTON—MCDONNELL DOUGLAS

defense electronics seems inevitable.

Contractors also have been looking overseas to make up for lost business. In July, General Dynamics won permission from the government to deliver 315 heavy tanks to Saudi Arabia beginning in 1993. That will allow America's only tank producer to keep its M-1 assembly plant in Lima, Ohio, open after its Army contract expires next year.

But the international arms trade is hardly a competitive cease-fire zone. Countries such as Britain, France, and Brazil have stepped up military sales efforts; meanwhile, countries that have long been customers, such as Pakistan, Egypt, and Taiwan, have started building weapons of their own. Total arms sales to the Third World dropped 26% last year, to $29.3 billion. Faced with what is increasingly a buyers' market, U.S. defense contractors will have to fight harder just to keep the business they've got. A harbinger: Since 1985 the U.S. share of world military aerospace sales has fallen 12 percentage points, to 61%. Says Rockwell's retired chairman, Robert Anderson: "There's a heck of an arms bazaar out there."

The best alternative may be to avoid the crowd by concentrating on niches that stand to stay strong into the next century: nonnuclear missiles; lighter tanks, planes, and artillery; "smart" munitions that can locate targets themselves; antisubmarine warfare equipment; combat-simulation software for training; and information technology. Northrop's strategy is to identify characteristics that will be common to many future weapons—such as the ability to fool radar or to navigate with extreme precision—and develop corresponding products. Says Kresa: "If you are ahead in those areas, you'll be in a business everybody wants to buy in the future."

■ CAPITALIZING ON CASH. Arms makers are waking up to the basics of managing in a shrinking market. Says Paul Wright, chairman of Chrysler Technologies: "In the future we will be an industry measured much more on return on equity and profitability than growth, and that's a change in attitude."

Take Grumman. The future is uncertain at best for its biggest moneymaker, the F-14D, and Grumman's income statement is weighted with annual interest charges of $120 million on nearly $1 billion in debt. Says John O'Brien, Grumman's feisty ex-CEO: "We are recognizing there is significant money to be made by managing cash."

That means taking elementary steps to cut costs. The company, which processes around 50,000 invoices per month, recently finished automating its billing system. Grumman also is offering a discount to the government if it pays bills within ten days of delivery. So far the company has been able to shed $60 million of its debt.

One step that Grumman has refused, but that financial analysts say is inevitable, is to cut back operations on Long Island, the company's highest-cost location. Lockheed, on the other hand, is selling $200 million worth of plant and office space in Burbank, California—as well as cutting 5,500 jobs, 7% of the company's work force. CEO Tellep figures this "very bold decision" will save Lockheed $50 million annually and eliminate $75 million in capital investment over the next three years. Part of the aeronautics group is moving into Lockheed's underutilized plant in Georgia—home, as luck would have it, of Senate Armed Services Committee Chairman Sam Nunn.

■ DRAFTING DOABLE DESIGNS. A Boeing analysis of MX missile production five years ago showed that the step from drawing board to factory was appallingly inefficient. Thousands of engineering drawings were needed for the project; the average one had to be revised 11 times after hitting the factory floor; each revision cost an average of $5,000. Now Boeing and other defense contractors are trying a new approach: doing designs right the first time.

Engineers designing a weapon used to whip up drawings and hand them off to colleagues at the factory, whose job it was to figure out how to build the new device. Often they couldn't—and the process came to a halt while blueprints went back to the designers for revisions. Lately weapons makers have adopted a practice widely used by civilian technology companies such as Hewlett-Packard and AT&T. Known as concurrent engineering, it involves getting design and manufacturing engineers simultaneously to design a product and the process to make it. Thomas Murrin, a former adviser to the Pentagon who is Deputy Secretary of Commerce, says this approach can cut in half the time it takes to make a new weapon operational.

Boeing's Ballistic Systems Division employed concurrent engineering in 1988 to develop a mobile launcher for the MX. A team of design engineers and specialists in manufacturing, materials, finance, and maintenance shared office space and worked together from the beginning. Boeing used the original MX project for comparison. The outcome: a 40% reduction in the time needed to design and build the launcher prototype, and a 10% reduction in cost.

■ SUPPORTING SUPPLIERS. At Texas Instruments' avionics group near Dallas, managers realized that to be competitive TI needed to bind itself more closely to its best suppliers. TI enlisted them in an ambitious quality-assurance program, training the suppliers' technicians in statistical process control and certifying them to monitor their own products. Everybody wins: Suppliers who participate capture a greater share of TI's business, while TI avoids the expense of retesting every component that comes into its factories. (It still does spot checks.)

Because suppliers rarely have an opportunity to see their products in action, TI last

THE TOP TEN DEFENSE SUPPLIERS

COMPANY primary military products	1990 est. revenues from govt. sales (in billions)	Percent of total sales
McDonnell Douglas airplanes, missiles, helicopters, electronics, space	$10.2	67%
Lockheed airplanes, missiles, electronics, space	$9.0	91%
General Dynamics airplanes, submarines, tanks, missiles, space, electronics	$8.6	87%
General Electric engines, electronics	$8.2	18%
Boeing airplanes, helicopters, missiles, space	$5.6	20%
Martin Marietta missiles, electronics, space	$5.4	90%
Rockwell International electronics	$5.3	44%
General Motors (Hughes) electronics, space, missiles	$5.2	4%
United Technologies engines, helicopters	$5.2	24%
Northrop airplanes, missiles, electronics	$4.6	88%

SOURCES: PRUDENTIAL-BACHE; DEPARTMENT OF DEFENSE; COMPANY REPORTS

year did something unique: It got permission from the Air Force to let suppliers meet with flight and ground crews who used their gear. Says Dave Current, a manager of procurement assurance at TI: "There's nothing quite like having a young man who has had to repair your product stand up and say, 'It's your problem, Mr. Components Supplier. You designed it wrong.' "

Sikorsky Aircraft, a unit of United Technologies that makes helicopters, has taken suppliers even farther afield—all the way to Turkey. Sikorsky is bidding on a contract to co-produce, with Turkey, 200 assault helicopters—business Sikorsky hopes will offset its declining U.S. sales. The bidding is intense: Sikorsky is competing against Bell Helicopter Textron from the U.S., as well as French, German, and Italian companies.

In June, Sikorsky took ten suppliers to Istanbul, where they met with senior executives of Turkish manufacturing concerns. The idea was to give the U.S. companies an opportunity to form partnerships. Says James Satterwhite, a Sikorsky vice president: "Our suppliers typically don't have the connections or knowledge about foreign countries that big U.S. companies have." The trip, organized by the Commerce Department, was the first federal trade mission for a single company and its suppliers.

■ PUSHING PRODUCTIVITY. Over the past couple of decades a web of cumbersome and redundant procedures has spread like poison ivy through the factories and warehouses of Wars 'R' Us Inc. GE Aerospace, Boeing, LTV, and TRW all have employees working to weed them out. At TRW's Electronics Systems Group, which builds equipment packages for satellites, employee teams are painstakingly analyzing hundreds of processes in an effort to expose and eliminate inefficiency. Similarly, at LTV's Camden, Arkansas, rocket plant, which turns out as many as 90,000 rockets a year for the Army, workers are looking for ways to make their products cheaper, faster, and better. The incentive: money.

Two years ago the plant's managers introduced a gain-sharing program. Employees were organized in teams, given productivity goals, and told that LTV would split with them fifty-fifty any savings they achieved. LTV also gave classes for workers on how to find and solve problems. The program is a winner. During the first year, the average employee received $1,900 in bonuses. General manager Wilbur Cummings says annual costs plunged 20%—boosting profits and enabling LTV to bid for new contracts at a lower price.

■ CONVERTING TO CIVILIAN SALES. The trick to diversification is finding businesses that play off the strengths of the company, then letting people who know the market run the show. Warns Raytheon Chairman Thomas L. Phillips: "You can't just start with a bunch of people who have done nothing but compete in the military market for 30 years, and sprinkle holy water on them." Hughes Aircraft, which wants to increase its commercial business from 20% to 40% of total revenues, has opened an office for diversification. It is trying to launch small commercial ventures that will match its military electronic products—such as lasers, microwave tubes, and very fast semiconductors—with market needs. In July the company announced the formation of HE Microwave, a joint venture with Delco Electronics, another General Motors subsidiary, which sells auto products. The new company will market sensors for both military radars and futuristic systems to help cars avoid collisions. Hughes predicts that in five or six years sales will top $400 million.

Lockheed, which for many years owned and operated the Burbank airport, wants to build and run airports all over the world. With hundreds of cities and towns in desperate need of airport space, the company thinks this business could be a fountain of cash. Some financial analysts agree. Says Peter Aseritis of First Boston: "The airport concept could be a brilliant growth strategy, if they can get state and local governments to privatize."

The company has begun developing a terminal at Lester B. Pearson International Airport in Toronto. Lockheed is an equity partner and will operate the 1.4-million-square-foot facility, which is set to open this winter. Don Jones, head of Lockheed's Technology Services Group, compares the project to developing a shopping center, only less risky since airports are a monopoly business.

Small defense companies are generally more flexible than big ones when converting to the commercial sector. But often they lack the resources to find opportunities. In Ohio, where 176,000 people work in defense industry jobs and add more than $6 billion a year to the state economy, officials set out to remedy that problem last year. The state sponsored a series of "conversion seminars," which introduce small contractors to purchasing agents from companies such as Honda, Siemens, and General Electric.

JACK VAN ANTWERP

Sands and Lube of Cletronics show off a monitor for cardiac patients.

It was through such a seminar that Cletronics, a Medena, Ohio, company with estimated annual sales of $3 million, went from making camera parts for surveillance planes to medical devices. Chief Executive David Sands bought the company last November, not expecting its Pentagon business to dry up as fast as it did. By year-end, orders dropped from $40,000 per month to practically zero. Through the conversion seminar, President Robert Lube hooked up with the not-for-profit Cleveland Clinic, landing an assignment to develop a pocket-size monitor that warns pacemaker patients of potentially lethal magnetic fields.

Cletronics has also scared up new business from General Electric and even Philips in the Netherlands. Says Lube: "Some companies are sitting back waiting for the government to call, saying, 'I've got an order for you.' That's not going to happen. Defense contractors that aren't aggressive and marketing oriented are going to find themselves on the outside looking in." As is often the case in civilian business, so it now is in defense: Hustling entrepreneurs like Sands and Lube are setting an example that major companies would do well to follow, if they want to prosper. F

THE BILLIONAIRES: RANKING THE WORLD'S RICHEST

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OIL REPORT

How to Achieve Energy Security

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"I really think the public misunderstood this guy, but he clearly had to go."

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"Nobody else is available to lead. It is the role the U.S. is destined to play."

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"By rallying the West to take immediate action, he foiled the great bank robbery of 1990."

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"A lot of what people are calling fraud is a combination of stupidity, bad judgment, and desperation."

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"My son takes care of earning money. I spend it—mainly for art."

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"One weakness of rich kids is that they have a very low frustration level."

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AN APPRECIATION OF HEDLEY DONOVAN

Hedley Donovan, who memorably served this magazine and our company, died at 76 on August 13. This appreciation is written by FORTUNE *columnist Daniel Seligman, a friend and colleague of his for 40 years.*

HUNDREDS OF writers and editors at Time Inc. during the Sixties and Seventies identified Hedley Donovan as a powerful, dominating presence in their lives. Millions of people who never met him were also influenced by Hedley—although they would be a lot less aware of the extent to which he was reshaping their reading matter. As deputy to Henry Luce (1959–64), and then Luce's successor as editor-in-chief of all Time Inc. publications (1964–79), he was one of the two or three most influential journalists in America. The publishing empire he led included *Time*, *Life*, FORTUNE, *Sports Illustrated*, *People*, *Money*, and a huge books division.

Tall, rawboned, massively calm in all circumstances, possessed of a deep baritone voice and (arguably) the highest IQ in the Time & Life Building, Hedley was born for the job. His autobiography is called *Right Places, Right Times*, modestly implying a certain amount of happenstance in his rise. In fact, he got to the top on naked talent. Roy Larsen, president of Time Inc. for many years, expressed a widespread sentiment when he congratulated the new editor-in-chief: "It was inevitable."

We at FORTUNE gave Hedley his start. Or so we jocularly told ourselves (and occasionally him) for quite a few years. He came to our staff as a writer in 1945 and quite rapidly established himself as a star. Surrounded by alibi artists clamoring for extensions of their deadlines, he was notorious for turning in his copy on time. His first drafts of stories were fact-freighted, thoughtful, graceful, wryly witty, and just about as long as they were supposed to be—all unheard of.

When he joined us, at age 31, he already had stunning credentials: a magna from the University of Minnesota, a Rhodes scholarship, experience playing ice hockey for Oxford in South Africa, stints covering Congress and the presidency for the Washington *Post*, wartime duty in Naval Intelligence. Hanging around him, you discovered that he had a fund of information ranging from the minutiae of American politics to the plots of operas to the details of corporate accounting rules.

In 1953 he succumbed to destiny and became FORTUNE's managing editor. For the next 6½ years and 80 issues he was our boss, and transformed the magazine. His main accomplishment was to preserve the literary and artistic strengths of the old FORTUNE while pushing the new one to deliver much more that business readers needed to know about management, markets, and economics. Hedley also ran a top-flight journalism school. One young writer, trained in economics, produced a superior but somewhat abstract report on the American shipbuilding industry, and got his draft back from Hedley with one penciled query: "What are they saying in the bars at Newport News?" By the mid-Fifties, FORTUNE had ceased being a *succès d'estime* on the coffee table. Circulation increased by one-third in Hedley's years (to 325,000), and we started making serious money.

After he became Time Inc.'s editor-in-chief, he did much to transform other magazines. He chose their managing editors and offered an ongoing stream of ideas and criticism. He endlessly nagged *Time* to be less partisan in its politics. He worked hardest of all on the weekly *Life* before concluding, in 1972, that there was simply no way to sustain any such general mass-circulation weekly in an era of expanding color television—an agonizing decision culminating in what he identified as the worst day of his career. Later he revived *Life* as a monthly. Both *People* and *Money* also were launched on his watch, and both proved immensely successful.

MUCH OF THE COMMENTARY on Hedley's career has centered on his record in preserving the independence of the company's editorial operations from the "business side." The story is true enough, but incomplete. What's ordinarily missing is Hedley's pervasive role as a corporate manager. He was effectively co-CEO during the 15 years as editor-in-chief. Andrew Heiskell, then chairman, notes that the company made no business decisions without Hed-

Donovan, age 42, as FORTUNE managing editor in 1956: headmaster in a great journalism school

MARVIN KONER—TIME INC. ARCHIVES

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. . . AND IN OTHER GLOBAL HOT SPOTS

■ Though you won't get much of a clue from recent news coverage, the Middle East is not the world's only trouble spot. Hundreds have died in ethnic clashes in Sri Lanka and India. The drug war continues unabated in Colombia. Nicaragua and Peru face perilous passages as new governments struggle with economic and military reform.

That makes 1990 the year of living dangerously for business travelers and tourists. The State Department has posted travel advisories for 61 countries, "the highest number in memory," according to one official. **Business Risks International** (BRI), a Tennessee company that specializes in security consulting, counted 4,422 terrorist acts worldwide last year, compared with a mere 298 in 1970. So far this year, 502 people have been assassinated and there have been more than 1,000 bombing and kidnapping incidents (see chart).

Major hot spots:

■ Peru. In his first actions as President, Alberto Fujimori fired his two top military generals and raised prices of basic commodities. Says Gene Mastrangelo of BRI: "He put austerity measures on a population already on the margin of existence. That's enough to do most people in."

■ Eastern Europe. In Yugoslavia, where ethnic unrest threatens to unravel the country, quarrels among Serbs and Albanians have erupted into violence. Because of civil disorder, many businessmen travel with bodyguards for fear of kidnappings and assassinations.

■ The Philippines. Though she has faced no coup attempts this year, President Corazon Aquino, a cat with nine lives, may be running out of them. The New People's Army, which kidnapped an American Peace Corps volunteer in June, continues to be a threat on the left, and military rebels, who tried a coup in December, are still very restless. **– Sally Solo**

A CASCADE OF VIOLENCE

January–June 1990

REGION	ASSASSINATION	BOMBING	KIDNAPPING
Latin America	180	411	59
Asia	156	163	22
Europe	66	136	2
Middle East	75	84	10
Africa	25	138	6
North America	0	3	0

SOURCE: BUSINESS RISKS INTERNATIONAL

Americans were involved in 3% of the incidents. Most of the victims were local businessmen, or in politics or the army.

Lorenzo finally hits the silk.

GOODBYE, FRANK HELLO, JAN

■ With fuel and labor costs spiking up fast, U.S. airlines are increasingly dependent on the lush revenues generated by full-fare business travelers. No one knows that better than Frank Lorenzo, 50, the one-time Wunderkind who soared to the top of the industry with **Continental Airlines** in the early 1980s only to crash as the decade came to a close. Continental's yield—the revenue it received to fly a passenger one mile—was one of the lowest in the industry last year. It generated just 11.2 cents, compared with 13.6 cents for Delta and 17.2 cents for USAir.

With little hope of buffing up his image, Lorenzo sold most of his stake in Continental to **Scandinavian Airlines System** for about $30.5 million. Says Lee Howard, head of the Washington consulting firm Airline Economics Inc.: "I really think the public misunderstood this guy, but he clearly had to go."

With SAS chief Jan Carlzon at the controls, Continental could well rebound. It has strong hubs in Houston and Denver, as well as a prime launching pad in Newark, New Jersey, for transatlantic traffic. Lorenzo left Continental with the lowest labor costs among its competitors. Wages last year accounted for only 22.3% of costs at Continental, vs. 33.9% at United and 35% at American.

Most important, Carlzon, 49, seems to have the right stuff to lure back business travelers. The charismatic Swede directed a dazzling turnaround at SAS, which is 50% owned by the governments of Sweden, Norway, and Denmark. Says John Pincavage, a director at the Transportation Group in New York, an airline investment banking firm: "He inherited a don't-care culture and changed it into a do-care one." SAS lost $30 million in the two years before Carlzon took over in 1981. Last year, the company made $193 million on revenues of $4.6 billion. **– Kenneth Labich**

THE $100 BILLION DEEP FREEZE

■ What happens when you freeze Kuwaiti assets to keep them away from Iraq's Saddam Hussein? First you have to find

West of Tower Bridge, Kuwait's London project may be stalled.

ZEFA—THE STOCK MARKET

businesses to hire foreign workers. For labor-short employers, that would be welcome news. Of 500,000 visas issued each year, only 54,000 are available for foreigners with needed job skills. The rest go to immigrants with relatives already in the U.S. The House bill would triple the number of job-related visas. It would also require large companies to pay $1,000 for each foreign worker hired. The money would go toward job training and education for American workers.

Lawmakers expect a showdown with the Bush Administration, which prefers a bill passed by the Senate last year that would give priority to those who arrive with graduate degrees and work experience. The Senate bill also has a provision for the most affluent immigrants: It would provide 6,800 visas each year for foreigners who are willing to invest $1 million or more in a U.S. business that employs at least ten people. **– M.A.**

MARKDOWNS AT SEARS ROEBUCK

■ When the goods aren't selling, a retailer cuts the price and gets rid of them. **Sears Roebuck** is taking the same approach with management. Michael Bozic, 49, chief executive of the Sears Merchandise Group, has been marked down to president and moved out of his job as head of the stores. New this fall: CEO Edward A. Brennan, 56, takes charge of the stagnating retail division 17 months after a trumpeted restructuring failed to produce significant results. Last quarter, retail sales increased just 2.2% while profits sank 32%. The move came one week after Sears announced it had ended merger talks with **Montgomery Ward**, which is run by Brennan's brother Bernard F. Brennan.

Bozic, demoted to chief operating officer but without direct store responsibilities, was sacrificed because he failed to make over dowager Sears into something a little more up-to-date. Says Carol Farmer, a respected retailing consultant: "It's a cultural problem, and cultural problems cause merchandising problems, not the other way round. If you don't have the right merchandise and the right program, you obviously don't have the right culture."

MICHAEL L. ABRAMSON

Sears' Brennan is a merchandiser again.

Despite closing warehouses, lowering the corporate head count by 1,500, and making 6,000 job and reporting changes, Sears' costs are still far higher than competitors'. More important, its store strategy has yet to click with consumers. Sears is trying to remake itself into an everyday low-price merchant and increase the selection of fashion and brand-name merchandise. By lowering prices, it hopes to to attract more customers while reducing promotional costs and moving goods more efficiently through the system. Though the plan is being faithfully executed, it is failing because rivals **J.C. Penney**, Montgomery Ward, and a host of other retailers beat Sears to the punch years ago, taking consumers with them.

In a statement, Brennan said, "While we have complete confidence in our strategy, we need to move faster and step up its implementation." Brennan thinks he can do it since he ran the stores from 1980 to 1984, executing the first of Sears' major retrenchments. But retailing has changed dramatically in the past six years. Sears needs to cut several hundred million dollars in costs, leaving Brennan the task of crushing the very organization that created him. Says Farmer: "I find it all very interesting to see all the players rearranging themselves, but I don't see what good it's going to do."

– Bill Saporito

SEXISM IN CINEMA

■ Is Sylvester Stallone really worth four times as much as Meryl Streep? The average moviegoer may not think so, but Hollywood does. Salaries for top movie actors have exploded in recent years, with Stallone getting $20 million to write and star in the upcoming *Rocky V*. Although none of the leading ladies are crying poverty, in relative terms they're getting stiffed.

While exact salary figures are hard to get, industry sources say that the highest-paid actress is Barbra Streisand, who gets $6 million per movie. Streisand, who hasn't had a hit since *Yentl* in 1983, boosts her take by producing and directing as well as acting. Streep and Jane Fonda, who each get $5 million per movie, are behind her (see table). Overall, women in the Screen Actors Guild earn an average of $8,895 per year, 38% less than men. (The average includes earnings for bit players in commercials and industrial films.)

Timothy Blake, who heads SAG's women's committee, says the predominance of action and adventure films has

PUTTING A STOP TO BOVINE NUDITY

■ Mosaku Sakurai, a professor at Tokyo University of Agriculture, has developed something he hopes will become fashionable among cows: matching coats and hats made from reflective silvered material. The outfits are designed to keep the beasts cool in summer, toasty in winter—and laid-back year round. Says Sakurai: "The coats reduce environmental stress. Comfortable cows produce more meat and milk." Japan needs more of both to compete with cheap imports. Whether every Japanese cow will soon suit up depends on the results of tests the government is conducting.

– Susan Moffat

DENNIS BUDD GRAY—PICTURE GROUP

"The coats reduce environmental stress."

NO COMPARABLE WORTH IN MOVIES

Nicholson *Murphy* *Cruise* *Weaver* *Pfeiffer* *Basinger*

HIGHLY PAID ACTORS	PAY (in millions)
Jack Nicholson	$11
Eddie Murphy	$10
Arnold Schwarzenegger	$10
Tom Cruise	$8
Mel Gibson	$7
Bruce Willis	$7

HIGHLY PAID ACTRESSES	PAY (in millions)
Jane Fonda	$5
Meryl Streep	$5
Sigourney Weaver	$4
Sally Field	$3
Michelle Pfeiffer	$3
Kim Basinger	$2

JAY MICHAELS

limited the number of roles available to women. Says she: "It puts women in a bad negotiating position." Although male-oriented films have pulled in big bucks at the box office this summer, the studios can't argue that films with female stars always fare worse. On average, Cher's last five films have grossed $48 million each, vs. $40 million for Stallone's.

A few top actresses are beginning to demand equal pay for equal work. Sigourney Weaver fought hard to get a man-size salary for her star role in the upcoming science fiction action film *Aliens III*. Weaver reportedly will earn $4 million, plus a percentage of the profits. **– M.A.**

FAIR DAYS DOWN ON THE FARM

■ The Agriculture Department has taken its first reading of the 1990 harvest, and the news is good for both farmers and consumers. Meat prices are trending down, and overall food prices will increase less than the rate of inflation in 1991.

This spring, farmers sowed about four million acres less than intended because heavy rains hampered plantings. Even so, yields have been strong. Grain production will rise 9% overall—a good thing since stocks were depleted by the 1988 drought and are the lowest since 1976.

Little of that extra grain will be sold abroad. World markets are well stocked because of big harvests from such major exporters as Canada and Argentina. Both the Soviet Union and China, major buyers of U.S. grain in the past, anticipate near-record crops of their own. And Iraq, which normally buys about two million tons of U.S. grain, has been cut off by the embargo. As a result, crop prices are expected to fall 3% in 1990 from last year's drought-affected levels. For next year, they should rise about 2% (see chart).

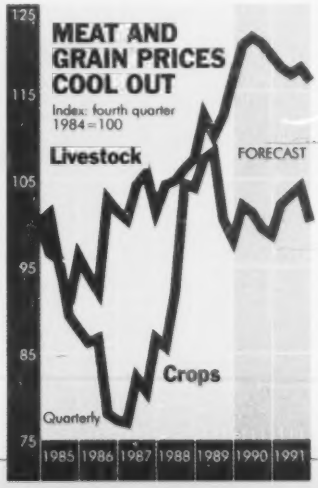
That isn't a large enough price increase to affect plans for increased livestock production, which is forecast to grow 3% in 1991. The size of the cattle herd is at rock bottom, and the latest inventory figures suggest a mild expansion in beef production is under way. Pork could be up 3% next year, and poultry is expected to add a 5% rise on top of this year's 7% increase. Livestock prices will decline slowly through the balance of 1990 and will average 2% to 3% lower next year.

For farmers, net cash income this year will rival the record of $58 billion in 1988. Expect to see a decline of $3 billion next year, though, partly due to higher expenses.

For consumers, the bountiful harvest should slow the increase in food prices. After rising just under 6% this year, prices are expected to move upward somewhat less next year—below 5%. Blame higher oil prices for contributing about three-tenths of a percentage point to the increase.

– Theodore Young

In North Dakota the spring crop of durum wheat is bumper size.



SQUEEZE ON BANKS

■ The savings and loan disaster has been getting all the attention, but banks have been failing too. Faced with a dwindling reserve, the Federal Deposit Insurance Corp. has proposed a 30% increase in premiums, on top of an already scheduled 25% rise. If the FDIC board approves the plan, commercial banks will pay a total of $4.8 billion in premiums next year, up from $2.8 billion this year.

The increase is expected to reduce earnings by more than 7%, but banks probably won't fight it. The FDIC's reserve has slipped under $13 billion, a historical low as a percent of insured deposits. Besides, the immense cost of the S&L bailout is fresh in everyone's mind (for more, see Money & Markets). Industry experts say banks will likely try to pass the cost on to consumers by raising checking fees and other charges. **– M.A.**

NOW HEAR THIS

■ **CONSTANTINE S. NICANDROS,** 57, CEO of Conoco oil company, calling for a gasoline tax of at least 50 cents a gallon:
"You can't have cheap prices for fuel and at the same time tell people, 'Don't drive too much.'"

■ **ANTHONY M. FRANK,** 59, U.S. Postmaster General, announcing that productivity gains and work force reductions have cut the Postal Service's annual deficit:
"I never thought I'd see the day I would be bragging about potentially losing 'only' a billion dollars, but I guess that day has arrived."

■ **JIM LEACH,** 47, Republican Congressman from Iowa, on the growing popularity of the nation's chief thrift regulator since the Bush Administration tried to get him to resign:
"Bill Seidman is the Jane Pauley of American government."

SCORECARDS ON THE OIL GIANTS

The U.S.-led embargo of Iraq and Kuwait, which together produced 20% of OPEC's crude exports last year, will jolt some of the world's leading oil companies and enrich others. Starting on this page are ten scorecards comparing the top companies doing business in the U.S., the world's largest market for oil and the biggest importer as well. These goliaths aren't accustomed to changing their sources of crude from month to month, but some will have to while the crisis lasts. Hardest pressed may be those most reliant on Iraqi oil, but all Persian Gulf supplies, even from friendly Saudi Arabia, are in jeopardy from the hostile troops massed along the Kuwaiti-Saudi border. As petroleum prices rise, the big profits will go to companies that produce high percentages of the crude their refineries need—and in the long run, to those like Amoco with substantial reserves of natural gas. ■ *by Susan Caminiti*

Exxon (U.S.)

REVENUE: $86.6 billion
PROFIT: $3.5 billion
PROVED RESERVES: 6.6 billion bbls.
SHARE PRICE:
12-mo. high: 55 1/8 **low:** 43 1/8
recent: 52 3/8 **P/E:** 17

WORLDWIDE SELF-SUFFICIENCY IN CRUDE: 52%

SOURCES OF CRUDE IMPORTED TO U.S.:

22% **OPEC (all from Persian Gulf)**
29% **Angola** 16% **Colombia**
16% **Oman** 17% **Other**

COMPANY OUTLOOK: Profits sagged after a $1.7 billion write-off for the Valdez spill . . . Over a fifth of its U.S. imports come from Persian Gulf OPEC members . . . Formidable even so . . . Says CEO Lawrence Rawl: "Current supplies are adequate, but shortages could occur if shortfalls in Iraq and Kuwait are not replaced."

Royal Dutch/Shell (U.K./Neth.)

REVENUE: $85.5 billion
PROFIT: $6.5 billion
PROVED RESERVES: 9.1 billion bbls.
SHARE PRICE:*
12-mo. high: 87 **low:** 63 3/8
recent: 83 5/8 **P/E:** 13

WORLDWIDE SELF-SUFFICIENCY IN CRUDE: 52%

SOURCES OF CRUDE IMPORTED TO U.S.:

56% **OPEC (22% of total from Iraq)**
19% **Mexico** 6% **Canada**
17% **Yemen** 2% **Other**

COMPANY OUTLOOK: Owns the world's largest proved reserves of oil and natural gas liquids, much located in the U.S. . . . Some offshore rigs in the North Sea are shut down for summer maintenance, temporarily halting their production . . . A big plus: rapidly expanding natural gas production in Britain.

* Share figures are for Royal Dutch Petroleum, which owns 60% of Royal Dutch/Shell; Shell Transport & Trading owns the other 40%.

Mobil (U.S.)

REVENUE: $51 billion
PROFIT: $1.8 billion
PROVED RESERVES: 2.6 billion bbls.
SHARE PRICE:
12-mo. high: 69 1/2 **low:** 51 5/8
recent: 67 1/8 **P/E:** 15

WORLDWIDE SELF-SUFFICIENCY IN CRUDE: 39%

SOURCES OF CRUDE IMPORTED TO U.S.:

33% **OPEC (12% of total from Iraq)**
32% **Canada** 11% **U.K.**
24% **Mexico**

COMPANY OUTLOOK: Crude poor but has extensive natural gas holdings . . . Says security analyst William Randol of First Boston: "Companies like Mobil might whisper in policymakers' ears about natural gas as an oil alternative." . . . Has a lucrative chemicals sideline that makes commodity goods and Hefty trash bags.

British Petroleum (U.K.)

REVENUE: $49.5 billion
PROFIT: $3.5 billion
PROVED RESERVES: 4.9 billion bbls.
SHARE PRICE:*
12-mo. high: 82 3/4 **low:** 54 5/8
recent: 80 7/8 **P/E:** 13

WORLDWIDE SELF-SUFFICIENCY IN CRUDE: 68%

SOURCES OF CRUDE IMPORTED TO U.S.:

86% **OPEC (all from Nigeria)**
8% **U.K.** 2% **Zaire**
4% **Colombia**

COMPANY OUTLOOK: Scant exposure to Persian Gulf . . . Big buyers of Nigerian light crude . . . Says BP Oil's general manager, Les Atkinson: "We would not describe the current situation as a supply crisis, nor is one imminent. Other producers can make up the supply that had been coming out of Iraq and Kuwait."

* Share figures are for ADRs of British Petroleum.

Financial and reserve data for fiscal 1989; share data as of 8/13/90, with P/E reflecting latest four quarters ending June 30; U.S. crude imports for May 1990.

SOURCES: JOHN S HEROLD INC. AND PETROLEUM ANALYSIS LTD.

WHERE THE OIL FLOWS

The world's major crude oil importers and exporters—and who gets what from whom.

OPEC member **Importer** **Exporter**

NORTH AMERICA

EXPORTERS

	Annual amount (millions of bbls.)	Main markets	Proved reserves (millions of bbls.)
MEXICO	497	U.S. 52%, Spain 16%, Japan 13%, France 5%, Brazil 2%	54,100
CANADA	256	U.S. 96%, Japan 0.7%, Netherlands 0.2%	6,800

IMPORTERS

	Annual amount (millions of bbls.)	Main suppliers	Imports as a % of total consumption
U.S.	2,421	Saudi Arabia 18%, Nigeria 12%, Mexico 12%, Canada 11%, Venezuela 10%, Iraq 7%, U.K. 3%, Indonesia 2%, Kuwait 2%	45%

SOUTH AMERICA

EXPORTERS

	Annual amount (millions of bbls.)	Main markets	Proved reserves (millions of bbls.)
VENEZUELA	382	U.S. 44%, N. Antilles 15%, W. Germany 9%, Canada 3%	58,100
ECUADOR	72	S. Korea 33%, U.S. 23%, Puerto Rico 16%, Panama 5%	1,400
COLOMBIA	54	N.A.	2,000
ARGENTINA	3	N.A.	2,300

IMPORTERS

	Annual amount (millions of bbls.)	Main suppliers	Imports as a % of total consumption
BRAZIL	233	Iraq 38%, Saudi Arabia 22%, Iran 9%, Nigeria 6%, Kuwait 5%	53%
CHILE	30	N.A.	86%

AFRICA

EXPORTERS

	Annual amount (millions of bbls.)	Main markets	Proved reserves (millions of bbls.)
NIGERIA	454	U.S. 49%, Spain 11%, W. Germany 8%, France 6%, Netherlands 6%	16,000
LIBYA	312	Italy 36%, W. Germany 26%, Spain 10%, France 9%, Greece 8%	22,000
ANGOLA	152	N.A.	2,200
EGYPT	145	N.A.	4,300
ALGERIA	80	Italy 33%, Spain 15%, W. Germany 14%, U.S. 10%, France 7%	8,400
GABON	49	France 31%, Netherlands 27%, Brazil 11%, U.S. 10%, S. Korea 3%	720

MIDDLE EAST

EXPORTERS

	Annual amount (millions of bbls.)	Main markets	Proved reserves (millions of bbls.)
SAUDI ARABIA	1,363	U.S. 25%, Japan 14%, France 6%, Bahrain 5%, Singapore 5%	255,000
IRAQ	823	U.S. 16%, Brazil 11%, Turkey 11%, Japan 8%, U.S.S.R. 7%	100,000
IRAN	564	Netherlands 14%, Japan 12%, Italy 9%, Turkey 7%, Belgium 7%	92,900
U.A.E.	500	Japan 47%, Italy 7%, Singapore 7%, U.S. 5%, S. Korea 5%	98,100
KUWAIT	279	Japan 27%, Netherlands 17%, U.S. 12%, Italy 9%, Brazil 4%, S. Korea 4%	94,500
QATAR	107	Japan 58%, France 11%	3,200

WESTERN EUROPE

EXPORTERS

	Annual amount (millions of bbls.)	Main markets	Proved reserves (millions of bbls.)
U.K.	513	W. Germany 27%, Canada 18%, U.S. 18%, France 13%, Netherlands 10%	5,200
NORWAY	343	U.K. 34%, Sweden 12%, W. Germany 12%, Netherlands 11%, France 9%	10,400

IMPORTERS

	Annual amount (millions of bbls.)	Main suppliers	Imports as a % of total consumption
W. GERMANY	524	U.K. 26%, Libya 16%, U.S.S.R. 8%, Norway 8%, Venezuela 7%	94%
FRANCE	483	Saudi Arabia 18%, U.S.S.R. 14%, U.K. 14%, Iraq 9%, Norway 7%	96%
ITALY	461	Libya 25%, U.S.S.R. 19%, Iraq 13%, Saudi Arabia 12%, Iran 11%	93%
NETHERLANDS	352	Iran 22%, U.K. 14%, Kuwait 13%, Saudi Arabia 13%, Norway 11%	94%
SPAIN	338	Mexico 23%, Nigeria 15%, U.S.S.R. 13%, Libya 10%, Iraq 10%	97%
BELGIUM	172	Iran 24%, Saudi Arabia 15%, U.K. 11%, Norway 10%, Iraq 8%	99%
SWEDEN	104	Norway 40%, U.K.16%, Iran 12%, U.S.S.R. 11%, Venezuela 7%	95%

EASTERN EUROPE

EXPORTERS

	Annual amount (millions of bbls.)	Main markets	Proved reserves (millions of bbls.)
U.S.S.R.	1,026	E. Germany 13%, Czechoslovakia 12%, Poland 10%, Bulgaria 10%, Italy 9%	58,500

IMPORTERS

	Annual amount (millions of bbls.)	Main suppliers	Imports as a % of total consumption
E. GERMANY	150	U.S.S.R. 90%	99%
CZECHOSLOVAKIA	120	U.S.S.R. 100%	99%
POLAND	110	U.S.S.R. 97%	99%
HUNGARY	62	U.S.S.R. 88%	82%

ASIA

EXPORTERS

	Annual amount (millions of bbls.)	Main markets	Proved reserves (millions of bbls.)
INDONESIA	249	Japan 64%, U.S. 27%, Australia 3%, Taiwan 2%	8,300
CHINA	202	N.A.	23,600
MALAYSIA	146	N.A.	2,900
BRUNEI	51	N.A.	1,400

IMPORTERS

	Annual amount (millions of bbls.)	Main suppliers	Imports as a % of total consumption
JAPAN	1,191	U.A.E. 20%, Saudi Arabia 16%, Indonesia 13%, Iran 6%, Kuwait 6%	99%
S. KOREA	261	Saudi Arabia 14%, U.A.E. 9%, Kuwait 4%, Libya 2%, Indonesia 2%	100%
SINGAPORE	252	Saudi Arabia 28%, U.A.E. 15%, Iran 10%, Kuwait 2%	100%
INDIA	130	Saudi Arabia 28%, Iran 23%, Iraq 20%, U.A.E. 11%, U.S.S.R. 8%	38%
PHILIPPINES	74	U.A.E. 13%, Iran 10%, Kuwait 10%, Saudi Arabia 6%	97%

All figures are based on 1988 data from the United Nations and OPEC, with these exceptions: Oil reserves were provided by *Oil & Gas Journal*; data for Hungary are 1987; and U.S. figures are for 1989, provided by the International Energy Agency. U.S. imports include natural gas liquids. Insufficient data were available for Myanmar (formerly Burma).

RESEARCH: SHELLEY NEUMEIER WITH DEBORAH S. COOPER. DESIGN: RENEE KLEIN

S&Ls: WHERE DID ALL

Our sleuth says $28 billion went to bad real estate loans, only $5 billion to fraud. The biggest hit was the interest paid while Washington dithered over how to put things right. ■ *by Gary Hector*

CALL IT the Case of the Missing Megabillions. We all know by now that taxpayers will have to fork over a sultan's ransom to make good the losses of America's insolvent S&Ls—$140 billion to $180 billion, according to the latest government estimates, and well over $500 billion, if you add on interest expense and the extra costs a recession might bring. But most of us don't have a clue as to where those dollars went.

Enter Bert Ely, who runs an Alexandria, Virginia, consulting firm that specializes in financial institutions. Ely's breakdown of the components of the crisis, illustrated here, offers the most detailed unraveling of this mystery yet. Follow those footprints from this page to the next, and you quickly grasp his main message: The chorus of Congresspersons and commentators who talk as if most of that money were stolen are dead wrong. According to Ely, criminal fraud accounts for only 3% of the $147 billion that he calculates is the net present value of the S&L bailout. Says Ely: "A lot of what people are calling fraud is a combination of stupidity, bad judgment, and desperation dealing."

That becomes clearer when you hold a magnifying glass up to two of the most expensive S&L failures: Western Savings of Phoenix and Miami's Centrust Savings. For nearly 60 years Western was owned and run by the Driggs family, a close-knit, civic-minded Mormon clan with no previous history as financial daredevils. But once Congress gave thrifts the green light to make riskier real estate loans in 1982, they revealed a shocking eagerness to advance huge sums for pie-in-the-sky projects.

Among their worst decisions was an out-of-state loan to the 25,000-acre Banning-Lewis Ranch in Colorado Springs. That ranch is now the largest single landholding of the U.S. government's Resolution Trust Corp., which took over Western Savings in 1989. By last May the portfolio that the

text continued on page 88

Tracking $147 billion ...

START back in the late 1970s. When rising inflation sent interest rates skyward, many thrifts—stuffed with low-interest, 30-year fixed-rate mortgages—couldn't generate enough income to cover the costs of their deposits. By 1983 these institutions had racked up $25 billion in losses just from that interest-rate mismatch.

THOSE BILLIONS GO?

$5 BILLION

THE Justice Department has so far charged more than 300 individuals in major S&L cases and convicted 231. But consultant Bert Ely's ballpark estimate is that crooks stole no more than $5 billion.

$14 BILLION

TO finance their lending spree, financially shaky S&Ls consistently paid depositors a premium above market rates. Over seven years that extra half to three-quarters of a percentage point added up to $14 billion.

$6 BILLION

LOSSES on non-real estate deals—$3 billion from junk bonds and an equal amount from business and personal loans—will boost the cost of the bailout by roughly $6 billion.

$14 BILLION

A STEEP rise in the thrifts' average operating costs during the 1980s contributed some $14 billion to the eventual cost of the bailout. Spending on silver lobster crackers and European junkets didn't help. But the big-ticket item was investment in unneeded branches.

$12 BILLION

BLAME this $12 billion on government inefficiency. It's an estimate of the losses from mistakes made during S&L sell-offs. In some cases regulators are taking so long to act that a deal's value drops sharply before completion. In others, they are selling rashly and giving private buyers costly—and unnecessary—incentives.

$28 BILLION

TO help S&Ls find alternative sources of income, Congress in 1982 voted to let them finance riskier real estate projects. Many got carried away. When prices plunged, they lost $28 billion on their loans to empty Texas office towers, Florida condos, and other turkeys.

... and how it grows

■ Consultant Bert Ely calculates the government could resolve the S&L mess tomorrow by writing a check for $147 billion. Financing that sum over 40 years at 8.5%, however, adds $500 billion in interest and lifts the total to $647 billion. For a fair comparison with other government expenses, most experts say to ignore interest.

$43 BILLION

AN insolvent S&L, by definition, owes more than it owns. By keeping hundreds of losers open rather than shutting them down in 1983, regulators ensured that S&Ls would continue to pay depositors interest they didn't have, cloaking their inadequacy behind government-approved accounting gimmicks. The interest: $43 billion.

ILLUSTRATION BY LINDA ECKSTEIN

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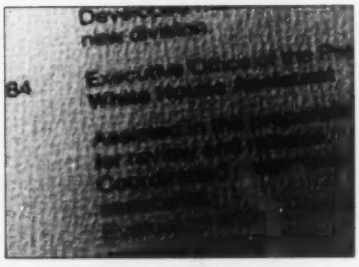

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THE WHITE HOUSE FELLOWSHIPS

Driggs family had amassed during their five-year binge was so battered by collapsing real estate prices that BankAmerica, which acquired Western's retail network from the RTC, kept only $220 million of its $2 billion in loans. Unloading the rest of those gold-plated office towers and condos, the RTC figures, will cost taxpayers $1.7 billion.

Centrust Savings of Miami charted a different route to disaster. Instead of diversifying out of money-losing home mortgages into real estate, David Paul, who took charge of this troubled S&L in 1983, plunged heavily into junk bonds. When that market cratered last year, Paul's $1.3 billion portfolio, consisting largely of deals underwritten by Michael Milken and Drexel Burnham Lambert, was exposed as illiquid and overpriced.

Unlike the upright Driggses, this highflying wheeler-dealer treated Centrust like his personal piggy bank. According to the RTC, he used the thrift's money to buy a $7 million yacht and finance his purchase of a home on Miami's exclusive La Gorce Island. Paul also squandered nearly $30 million on an art collection and spent lavishly on silver lobster crackers, Baccarat crystal, and gifts from Tiffany.

Scandalous? Of course. But even if federal investigators bring charges against Paul—and so far he's merely under investigation—what's at stake is just a small fraction of the estimated $1.7 billion price tag that the RTC puts on Centrust's failure. The big hit comes from Paul's legal, if imprudent, speculation in junk bonds.

The claim that the S&L crisis will cost more than World War II is both unfair and innumerate.

As bad as the S&L debacle is, many commentators are making it look even worse than reality. In assessing the tab, most responsible analysts caution against lumping interest costs into the final tally. The $147 billion cited by Ely, for example, is his estimate of the check the government would have to write to close the books on all insolvent thrifts tomorrow. If you assume instead that the Treasury finances that spending by issuing long-term bonds, the bill, stretched out over 40 years, climbs well above $500 billion. To emphasize the waste, some writers compare that amount with the *annual* cost of, say, Medicaid spending ($41 billion) or AIDS research ($3 billion). But that's like comparing two houses using the list price for one and the price plus mortgage costs for the other. Strap 40 years of interest onto the $300 billion annual defense budget, and nobody, not even Jesse Helms, would vote for another B2 bomber.

Just as unfair—and even more innumerate—is the oft-heard claim that the S&L losses will exceed the costs of World War II. This comparison makes the kindergarten error of failing to adjust historical numbers for inflation. Sure, the U.S. spent $360 billion between 1941 and 1945 waging World War II. But translate that into 1990 dollars, and it swells to more than $2.5 trillion—and that's *before* adding in the enormous interest expenses generated by financing a global war.

So by all means, get mad. After all, even without the extra hype, $5 billion in white-collar crime, compounded by billions more in dumb deals, still leaves plenty to feel angry about. But don't forget the even larger role that a host of conflicting or poorly thought out government decisions played. For example, many S&Ls, pursuing their historical role as sources of long-term, fixed-rate mortgages, would never have gotten into trouble had they not been whipsawed by double-digit inflation and the lifting of interest-rate ceilings on deposits in the late 1970s and early 1980s. Ely's analysis is a useful reminder that bad policies, rather than bad men, are what landed us in this mess to begin with. F

REPORTER ASSOCIATE *Antony J. Michels*

THE MOST EXPENSIVE SELL-OFFS

S&L*	COST TO TAXPAYERS estimates in billions
American Savings Stockton, California	$4.37
University Federal Savings Houston	$2.58
Western Savings & Loan Phoenix	$1.73
Centrust Savings Miami	$1.70
United Savings of Texas Houston	$1.60
Bright Banc Savings Dallas	$1.38
Gill Savings San Antonio	$1.24

*Does not include S&Ls sold as part of a group.

SOURCES: RESOLUTION TRUST CORP. FDIC

THE BILLIONAIRES 1990

NAME Age			WEALTH billions of U.S. dollars	SOURCES OF WEALTH Background
SULTAN HAJI HASSANAL BOLKIAH MU'IZZADIN WADDAULAH, 44	Bandar Seri Begawan BRUNEI		**$25.0**	**Oil and gas resources; real estate around the world; foreign investments.** The tiny sultanate of Brunei (pop. 227,000) on the northwest coast of Borneo is one of the world's oldest extant monarchies. Bolkiah, Sultan No. 29, has two wives—one the Queen of Brunei, the other a former airline stewardess—with whom he alternates nights. The Sultan may have been embarrassed by press reports about a $70 million marijuana operation that authorities recently uncovered on his cattle station near Katharine, Australia. Eight people were arrested.
KING FAHD BIN ABDUL-AZIZ AL SAUD, 69 **and family**	Riyadh SAUDI ARABIA		**$18.0**	**Saudi Arabia's oil and gas resources.** Of the plentiful progeny of King Abdul-Aziz, also known as Ibn Saud, founder of modern Saudi Arabia, Fahd and his six full brothers are regarded as among the best educated and most able. This is fortunate for his country because a confrontation looms between Fahd and Iraqi leader Saddam Hussein, who threatens the desert kingdom.
FORREST E. MARS SR., 86 **FORREST E. MARS JR.,** 59 **JOHN F. MARS,** 54 **JACQUELINE MARS VOGEL,** 50	Las Vegas NEVADA McLean VIRGINIA Arlington VIRGINIA Bedminster NEW JERSEY		**$12.5**	**100% of Mars Inc.: M&M/Mars, Uncle Ben's Rice, Kal-Kan pet food, Mars Electronics.** Forrest Sr. ceded nominal control of Mars Inc. to his sons, John and Forrest Jr., in 1973 and later took up residence over his Las Vegas candy factory. Alas, the two boys have not equaled the sum of one old man, and competitors such as Hershey and Nestlé now threaten Mars's primacy in the "chocolate-enrobed" products arena—a.k.a. candy bars. As always, family and company are circumspect about publicity. They allegedly have nixed advertisements on such TV shows as *Nightline* and *Golden Girls*, which they deem symbolic of "antifamily, antireligious, or antisocial behavior."
QUEEN ELIZABETH II, 64	London ENGLAND		**$11.7**	**The Crown Estates: 267,000 acres in England and Scotland; U.S. and European real estate; racehorses; art, stamp, silver, porcelain, and jewelry collections; vast stock portfolio.** As long as the monarch's personal fortune remains untaxed, Elizabeth II will remain the world's richest woman. And she's only getting richer. Her net worth has increased by around $800 million this year: Analysts estimate her stock portfolio has risen a stately 8% since last year, and her art collection is up some 40% in value.
SAMUEL I. NEWHOUSE JR., 62 **DONALD E. NEWHOUSE,** 60 **and family**	New York NEW YORK		**$11.5**	**100% of Advance Publications and Newhouse Broadcasting.** Si and Don have been running Advance, which includes Condé Nast's *Vogue* and *Vanity Fair* along with 30 newspapers and several radio stations, for 11 years now since their dad, Sam Newhouse, died. Early this year, the family finally won its tax bout with the IRS over Sam's estate. The feds had sought $610 million in inheritance taxes, but Si and Don will have to fork over a fraction of that.
ALBERT REICHMANN, 62 **PAUL REICHMANN,** 61 **RALPH REICHMANN,** 58	Toronto CANADA		**$11.1**	**100% of Olympia & York Developments.** The Reichmann family is as secretive as it is wealthy, and with an $11 billion nest egg, up from $8.4 billion last year, they are very wealthy. But they lent money to the ill-fated Robert Campeau, and the bankruptcy of his Allied-Federated Stores splashed some unwelcome ink on the Reichmanns anyway.
YOSHIAKI TSUTSUMI, 56	Tokyo JAPAN		**$7.3**	**40% of Kokudo Keikaku, which owns 48.5% of land-rich Seibu Railway.** Would that Japan's richest man were also its best loved. But Yoshiaki Tsutsumi isn't winning any popularity contests. After nearly a year as head of Japan's Olympic Committee, he resigned, criticized for mishaps at the Asian Winter Games and for his efforts to lure the 1998 Winter Olympics to a spot near one of his resorts.
SAM MOORE WALTON, 72 **and family**	Bentonville ARKANSAS		**$7.3**	**38.5% of Wal-Mart Stores Inc.** Some 1,438 Wal-Marts dot the South and Midwest like freckles on a Norman Rockwell urchin. As solidly patriotic as any of that painter's subjects, Wal-Mart initiated the Buy American program in 1985 to help keep the country competitive. With earnings of $1.1 billion on sales over $25 billion, the retailer is certainly doing its part. No wonder it consistently ranks as the most admired retailer in the U.S.
JOHN WERNER KLUGE, 75	Charlottesville VIRGINIA		**$7.0**	**97.4% of Metromedia Inc.; real estate; stockholdings; cash, lots of it.** Starting with a small radio concern that he took over in 1959, Kluge built a cornucopian media company whose properties included cellular telephones and the Harlem Globetrotters. He sold it in 1984 and started all over again with a "new" Metromedia that has a hand in everything from steakhouses to robotic billboard painting. The German-born billionaire is starting over in his personal life too, having ended his nine-year marriage to Patricia Rose, a Junoesque armful who once took it all off for a British skin magazine. Now she takes title to their 45-room Charlottesville mansion plus 9.9 acres.

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NAME Age		WEALTH billions of U.S. dollars	SOURCES OF WEALTH Background
TSAI WAN-LIN, 65 **TSAI WAN-TSAI,** 61 **and family**	Taipei TAIWAN	**$6.5**	**65% of Cathay Life Insurance; 60% of Cathay Construction.** A plunging Taiwan stock market has clipped nearly a third off the Tsais' fortune since last year. But they'll never have to go back to the fruit and vegetable stand that launched their careers as billionaires. Later, they branched out into soy sauce and eventually into a wide range of financial and industrial concerns. Today, Cathay is the largest privately owned construction outfit in Taiwan.
KENNETH ROY THOMSON, 67 **and family**	Toronto CANADA	**$6.2**	**69.2% of Thomson Corp.; 78.5% of Hudson's Bay Co.; 12.4% of Consolidated Talcorp; art; real estate.** Thomson, the Right Honorable Lord of Fleet—as in Fleet Street—controls nearly 600 daily and weekly newspapers throughout North America and Britain. They might just as well use their presses to print money: The company earns an estimated $1.5 million each day. The frugal Thomson spends very little of those millions on such fripperies as clothing, continuing to wear a weathered gray overcoat and carry a plastic shopping bag as a briefcase. He and his wife, Marilyn, have three children.
KICHINOSUKE SASAKI, 58	Tokyo JAPAN	**$5.7**	**100% of Togensha, a real estate firm.** Sasaki professes, "The best way to travel is to go on the spur of the moment, tripping around like some vagabond." Indeed, the real estate mogul's career has been peripatetic. Sasaki started out in law school, switched to medicine, and eventually went into commercial real estate in Tokyo after opening a couple of clinics. He lives modestly on the credo that "You can't have as much as you want because it's not good for you."
GERALD GROSVENOR, 38 **and family**	London ENGLAND	**$5.4**	**Real estate holdings including 300 acres in London's exclusive Mayfair and Belgravia districts, 100,000 acres of Scottish woodlands, 12,000 acres in Vancouver, British Columbia, a 10,000-acre Australian sheep station, commercial properties in Britain, Hawaii, and California, and holdings in Northern Ireland.** Grosvenor, the sixth Duke of Westminster, is Britain's wealthiest man and second-largest landowner after the Queen. Although Grosvenor's properties, which he inherited and enhanced through shrewd business dealings, earn him an estimated $5,100 an hour, a revision in British tax law allows him to pay his taxes at the same rate as his housekeeper and chauffeur. His wife, Natalia, is godmother to Prince William.
SHEIKH JABER AHMED AL SABAH, 64 **and family**	KUWAIT	**$4.8**	**Cash; vast foreign investments.** Like his fortune, the Sheikh himself is living outside his country, sent into exile by the Iraqi invasion of Kuwait. As of this writing, he is directing resistance against the aggressors from an unknown location in the Saudi desert. The Sheikh is tough: When terrorists hijacked a Kuwaiti airliner and kept it hostage for two weeks, Jaber refused to give in to them. His brother Fahd was killed by the Iraqis.
CHARLES KOCH, 54 **DAVID KOCH,** 50	Witchita KANSAS New York NEW YORK	**$4.7**	**80% of Koch Industries.** Charles took over Rock Island Oil & Refining in 1967 after his dad, Fred C. Koch, died, renaming it Koch Industries and building the $250 million company into an $18 billion behemoth. Now instead of company revenues, Koch and his brother David are building a case in court. Their brothers, William and Frederick (see below), are still suing over a 1983 settlement in which they were bought out of the company for a reported $620 million—a price William now alleges was unfairly low. Koch relatives and company execs own the remaining 20%.

WHAT LIES BEHIND THE NUMBERS

Estimates of net worth are based on published information or appraisals of asset values. To qualify, a prospect must have a net worth—total assets after subtracting debt—of $1 billion or more. For those with holdings in publicly traded companies, the value of their shares was computed using the closing price on July 16. Currency conversions into U.S. dollars were based on July 16 exchange rates.

To determine the value of holdings in private companies, FORTUNE identified similar public companies, made reasonable adjustments for dissimilarities, and calculated a value based on the current market value of the public counterparts. In some cases we used prices paid for similar companies in recent takeovers or buyouts. Where data are lacking for ownership of shares in private companies, we used the best information available from persons knowledgeable about the companies and individuals involved.

The list includes individuals or a "nuclear" family composed of husband and wife, parent and child, siblings, or some combination of those relationships. We exclude cousins and in-laws, though when brothers and their children are involved in a business, the cousins obviously have a stake in a single fortune. Where it is clearly documented that family members share in the single fortune, we list them by name; where ownership boundaries are unclear, we note "and family." When the wealth is explicitly concentrated in the hands of one individual, we list him or her alone.

We are indebted to our correspondents. Sources outside the *Time* and FORTUNE network: Japan—*Nikkei Venture* magazine; Switzerland—Rico Carisch; England—Jennifer Fisher; Germany—Franz Spelman; Canada—Adam Corelli; U.S. Midwest—Joe Szczesny; Italy—Karen Wolman. Data gathering was supervised by FORTUNE reporter Andrew Erdman, assisted by Stephanie Losee, Michael Rockoff, Deborah Cooper, Mark Fefer, Ricardo Sookdeo, and Nicole Quow.

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NAME Age		WEALTH billions of U.S. dollars	SOURCES OF WEALTH Background
ANNE COX CHAMBERS, 70 **BARBARA COX ANTHONY,** 67	Atlanta GEORGIA Honolulu HAWAII	**$4.5**	**98% of Cox Enterprises.** America's wealthiest women, the Cox sisters are daughters of three-time Ohio Governor James Cox Sr., who founded the media company and later ran for President of the United States. After a tussle, the two sisters won seats on the Cox board of directors, eventually buying out the remaining family members in 1985 for almost $2 billion. Barbara's son, James Cox Kennedy, is chairman of Cox Enterprises. The two sisters have five kids between them.
PERRY BASS, 76 **SID RICHARDSON BASS,** 47 **EDWARD PERRY BASS,** 45 **ROBERT MUSE BASS,** 42 **LEE MARSHALL BASS,** 33	Fort Worth TEXAS	**$4.5**	**Oil, real estate, investments in Walt Disney Co., Universal Health Services, and more.** The Bass family fortune began with wildcatter Sid Williams Richardson, who left money to his nephew Perry Bass and Perry's four sons. The Basses speedily parlayed their millions into billions thanks to Sid and Robert's talents as dealmakers. This year hasn't been the smoothest: The Bass-run Airlie Group, with interests in such firms as insurer First Executive, lost money, and Bob's unsuccessful raid on the St. Petersburg *Times* has resulted in lawsuits and the family's biggest dose of bad publicity since Sid ran off with Mercedes Kellogg.
JAY PRITZKER, 68 **ROBERT PRITZKER,** 64 **and family**	Chicago ILLINOIS	**$4.5**	**100% of Hyatt Corp., hotels and resorts; 100% of Marmon Group.** Last year Hyatt took in an estimated $3.2 billion operating 159 hotels—some 69,000 rooms—from Morocco to Minneapolis. Rumor has it that the Pritzkers are negotiating to build a version of Radio City Music Hall in Tokyo, now that the Japanese own the one in New York. Jay is married with four children, and Robert is married with five children (three of them by a previous spouse).
QUEEN BEATRIX, 51	The Hague NETHERLANDS	**$4.4**	**Securities, including stock in Royal Dutch/Shell; jewels; real estate.** The well-liked, unpretentious sovereign has a law degree and controls a fortune derived from ten Dutch guilders split up among the dozen heirs of William of Orange after his murder in 1585. The Dutch royal family has always had the common touch, but it's been threatening to get too common. Holland lodged a protest with the Italian government over a perceived security risk from the public beach near the royal family's waterfront cottage on the Mediterranean.
THOMAS SCHMIDHEINY, 45 **STEPHAN SCHMIDHEINY,** 43 **ALEXANDER SCHMIDHEINY,** 39	Zurich SWITZERLAND Hurden SWITZERLAND Calistoga CALIFORNIA	**$4.2**	**Nueva Holdings, construction supplies; Unotech, high-tech investing; SMH, watch manufacture; BBC/ABB and Landis & Gyr, electronics firms; Anova Holdings, packaging and real estate.** At the age of 25, Stephan took over his father's construction materials business, Eternit, which he divested of its asbestos manufacture, replacing the line with cement fiber and other, safer building products. Thomas-run Holderbank mixes out 43.5 million tons of cement annually, helping solidify its 35%-or-so share of the North American and European markets. Alexander runs a vineyard whose wines have won prizes. On occasion, the brothers have been known to swap pieces of their businesses.
GIOVANNI AGNELLI, 69 **and family**	Turin ITALY	**$4.0**	**39.4% of Fiat Group; real estate; art.** Car-racing Tom Cruise may have been voted Sexiest Man Alive, but car-making Gianni Agnelli was voted the Most Desirable Man in Italy while also heading his country's largest private industrial conglomerate. Eat your heart out, Robert Stempel. And Fiat is having its own days of thunder: Last year sales hit a high of $42 billion. Agnelli has two children.
SHEIKH RASHID BIN SAID AL MAKTOUM, 80 **and family**	Dubai UNITED ARAB EMIRATES	**$4.0**	**Oil; vast foreign investments.** What is Dubai's is Al Maktoum's. *L'état c'est* most definitely *lui*. Dubai's wealth is not entirely petroleum based. The tiny U.A.E. state is also a major reexport center where merchants acquire electronic goods cheaply from the Japanese, then resell to Africa, Southeast Asia, and Europe. In addition, the nation imports some 25% of all newly mined gold, subsequently smuggling much of it into India for use as dowries. Maktoum-bred racehorses and camels regularly collect prizes in France, Britain, and at home.
JOHANNA QUANDT, 68 **and family**	Wiesbaden WEST GERMANY	**$4.0**	**67% of BMW; securities.** Rumors persist that the widow of Herbert Quandt intends to sell the stake in BMW that her husband acquired when sales were low and shares were lower. But as one German newspaper put it, where else could she put her money that would be better? Last year BMW sales were up 8.4%, to $14.8 billion. And while Toyota and friends made Quandt sweat her share of the U.S. luxury car market with new high-end models, even the Japanese are tooling around in BMWs. Johanna's two children, Susanne, 27, and Stefan, 23, are being readied for the driver's seat.

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EUGENE PAUL (J. PAUL JR.) GETTY, 58 **GORDON PETER GETTY,** 56	London ENGLAND San Francisco CALIFORNIA		**$3.8**	**Trusts; inheritance; investments.** Gordon, fourth son of the notoriously heartless J. Paul Getty, is a workaholic—not about business but about music. His compositions garner good reviews even if his lieder singing doesn't. Gordon hasn't been very active in business since he sold the family's 40% stake in Getty Oil to Texaco for $4 billion in 1984, and triggered lawsuits from relatives, as well as the now famous Texaco-Pennzoil imbroglio. His London-based brother, J. Paul Jr., is so generous with his wealth he was granted honorary knighthood in 1986 (though he remains an American citizen for tax purposes). His fortune reportedly earns interest at a rate of $5 per second.
MARY IDEMA PEW, 68 **ROBERT PEW,** 66 **ROBERT PEW JR.,** 39 **KATE PEW WOLTERS,** 33	Grand Rapids MICHIGAN	N	**$3.8**	**Controlling interest in Steelcase Inc.; real estate.** Closely held by members of the company's founding clans—Pew, Wege, and Hunting—Steelcase, the office furniture manufacturer, would, if it were public, rank 212th on the FORTUNE 500 with sales of nearly $2 billion. Renowned for enlightened management and skillful manufacture, the company dates back to 1912 when Henry Idema, a prominent local banker, was looking for a way to set up his son Walter in business. With the help of welding enthusiast Peter M. Wege, Steelcase was born.
WARREN EDWARD BUFFETT, 60	Omaha NEBRASKA		**$3.8**	**44.7% of Berkshire Hathaway.** A belief in long-term "value investing" has helped Warren Buffett boost Berkshire Hathaway's stock from $12 a share in 1965 to recent quotes well above the $7,000 mark. In the Berkshire portfolio: 17.3% of Capital Cities/ABC, 6.9% of Coca-Cola, and 12% of USAir's voting stock among other holdings. But the wizard of Omaha, who peppers his annual reports with quotes from Goethe and allusions to Mae West, lives modestly and expects that his three children will too. Just to make sure, he's leaving his money to organizations that limit population growth and promote nuclear disarmament.
EDGAR M. BRONFMAN, 61 **CHARLES R. BRONFMAN,** 59 **and family**	New York NEW YORK Montreal CANADA		**$3.5**	**40% of Seagram Co.; 50% of Huang & Danczkay Properties, a commercial real estate developer; partial stake in the Montreal Expos professional baseball team.** The pricey Chivas Regal and Crown Royal whiskeys along with the renowned Martell cognacs all come from the world's largest distiller, Seagram Co. Founded by Samuel Bronfman during Prohibition, Seagram derives a good chunk of its revenues today from its 23.5% stake in Du Pont. In July 1989 34-year-old Edgar Jr. was appointed president and chief operating officer. Last year Charles, who runs the Canadian branch of the family, gave $1.5 million to Israel's Labor Party, making him that country's single biggest political contributor.
FREDERIK H. FENTENER VAN VLISSINGEN, 51 **and family**	Hilversum NETHERLANDS		**$3.5**	**Controlling interest in Steenkolen Handels Vereniging (SHV), energy and retail operations; Noro Group, securities and commercial real estate; Flint Holdings, investments.** Steenkolen has shrewdly traded energy properties in the past few years. Though only partly Van Vlissingen–owned, the financial concern is estimated to be worth some $3.8 billion. Frederik's brother Paul is chief executive of SHV.
COSTAS MICHAEL LEMOS, 79	Lausanne SWITZERLAND		**$3.5**	**Shipping; real estate; cash; investments.** His family wanted him to become a lawyer, but young Costas Michael was drawn to the sea instead. Still in his 20s, Lemos not only received a captain's license, but began acquiring freighters as well. Lemos's stake in shipping is only some 10% of his total fortune today, however. His son, Michael Costas, runs most of the operations but his daughters Chrysanthi and Irini are thought to assist in some capacity.
GAD RAUSING, 68 **HANS RAUSING,** 64	London ENGLAND Sussex ENGLAND		**$3.5**	**100% of TetraPak, one of the world's biggest food-packaging groups.** Ruben Rausing, sire of Hans and Gad, invented a tetrahedron-shaped container that did away with the need to refrigerate perishable liquids. That was 35 years ago. Today there are two main TetraPak product lines: The "Tetra Brik" for juice and milk and the "Tetra Rex" for other pasteurized dairy products. Swedish by birth, the Rausings did away with the need to pay confiscatory taxes by relocating to Britain.
A. ALFRED TAUBMAN, 66	Bloomfield Hills MICHIGAN		**$3.5**	**68% of Sotheby's Holdings; John Wanamaker department stores; A & W Restaurants; real estate; art.** Taubman, who got his start building gas stations in Detroit after the war, moved into fine art and began marketing pictures with considerable panache. His philanthropy is equally showy: In the past 12 months, he has given $15 million to the needy Harvard University, and has offered to help with Hurricane Hugo's cleanup costs.

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RONALD OWEN PERELMAN, 47	New York NEW YORK	**$3.4**	**100% of MacAndrews & Forbes Holdings.** Like the women who buy his Revlon cosmetics, Perelman wants to put a good face on his career and make himself over from 1980s corporate raider to 1990s industrialist. He's been successful so far, but his plan to sell off pieces of Coleman, the venerable camping equipment maker, right after he bought it, has raised a few unplucked eyebrows. He's married to TV gossip reporter Claudia Cohen.
WILLIAM GATES III, 34	Seattle WASHINGTON	**$3.2**	**35.9% of Microsoft computer software.** The company Bill Gates and prep-school buddy Paul Allen (see below) started in 1975 has made billionaires of them both. Microsoft's new Windows 3.0 software threatens to take a huge bite out of Apple Computer's long-cherished primacy in user-friendly programs. Gates's net worth has tripled since FORTUNE's tally of the billionaires was last published, largely on the strength of Microsoft stock.
KENNETH COLIN IRVING, 91 **JAMES KENNETH IRVING,** 61 **ARTHUR LEIGH IRVING,** 59 **JOHN E. IRVING,** 56	Hamilton BERMUDA New Brunswick CANADA New Brunswick CANADA New Brunswick CANADA	**$3.2**	**3.4 million acres of timberland; Irving Oil; newspapers; TV stations; hardware and convenience store chains; shipbuilding; commercial real estate.** Kenneth Colin Irving, New Brunswick's wealthiest individual, got started at age 12 by personally butchering a flock of ducks and selling them at a profit. Displaying a similar hands-on attitude in later years, he reportedly challenged 40 striking workers at his oil refinery to a fist fight (none stepped forward). Once he announced: "Business and politics don't mix in New Brunswick. This province is too small for politics." No one disputed him. He has three sons.
ESTÉE LAUDER, 82 **and family**	New York NEW YORK	**$3.1**	**100% of Estée Lauder Inc.** From helping her uncle make and sell facial cream as a girl, Lauder, born Josephine Esther Mentzer to Jewish immigrants from Eastern Europe, now queens it over an empire that last year sold some $1.6 billion worldwide in toiletries and cosmetics. Her own best advertisement in designer gowns, matching hats, and careful makeup, Lauder leaves the running of her business to her older son, Leonard, who is CEO. His younger brother, Ronald, the former ambassador to Austria, runs his own investment outfit.
GARFIELD WESTON, 63 **W. GALEN WESTON,** 49	London ENGLAND Toronto CANADA	**$3.1**	**58% of George Weston Ltd.; 63% of Associated British Foods; Holt-Renfrew stores.** The Weston wealth comes from groceries. Galen runs the Loblaw chain with stores throughout North America, while brother Garry's ABF supermarkets are based in Britain. Galen sells a popular line of environmentally friendly products, and Garry shops at his own stores where he reportedly takes advantage of the specials.
RAUL GARDINI, 57 **IDINA FERRUZZI GARDINI,** 54 **and family**	Ravenna ITALY	**$3.0**	**Ferruzzi Finanziaria: 66.8% of Ferruzzi Agricola, agribusiness, energy, newspapers, chemicals, and 33% of Montedison.** Smart enough to marry the boss's daughter, and adroit enough to take control of the business when his father-in-law died in 1979, the strong-willed, chain-smoking Gardini is still known as "the Peasant" for his rural roots. But this son of the soil entertains VIP friends at his Renaissance palace on Venice's Grand Canal and races yachts.
KONRAD HENKEL, 74 **and family**	Düsseldorf WEST GERMANY	**$3.0**	**49% of Henkel Konzern: detergents, hygienic products, chemicals, and epoxies.** Konrad Henkel remains in charge of the chemical concern his grandfather started, though he is long past retirement age—that's why it pays to control the business. But Konrad believes no family member has a birthright to an executive position. On a personal level, clan Henkel grows ever less visible. Konrad's wife, the gregarious Gabriele, celebrated in the press for her famous parties, now avoids publicity.
HENRY LEA HILLMAN, 71	Pittsburgh PENNSYLVANIA	**$3.0**	**Hillman Co.: venture capital, real estate, securities, and industrial companies.** His company's informal credo is that the spouting whale gets harpooned, and the billionaire son of Pittsburgh coal and gas tycoon J. H. "Hart" Hillman is not fond of publicity or of listings such as this. Henry Lea's business acumen—and cash—helped birth two of the country's most renowned investment groups: Kohlberg Kravis Roberts and Kleiner Perkins Caulfield & Byers. His wife, Elsie, a close friend of President Bush, is an active Republican.
CARGILL MACMILLAN JR., 63 **WHITNEY MACMILLAN,** 60	Minneapolis MINNESOTA	**$3.0**	**40% of Cargill Inc.** The MacMillans, along with their cousins the Cargills, preside over America's largest privately held company and its biggest grain exporter, with 1989 sales surpassing $40 billion. Shrewd management and regional grain shortages have made the company formidable. Whitney is chairman and CEO while brother Cargill sits on the board. The company is headquartered in a 63-room replica of a French château (sans stables) near Lake Minnetonka.

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H. ROSS PEROT, 60	Dallas TEXAS	**$3.0**	**Perot Systems Corp.; cash; investments, including 16% of Next Inc.; real estate.** Perot claims he puts most of his cash in CDs, and there's enough to keep a good-size S&L afloat: roughly $1.68 billion from the buyout of his Electronic Data Systems by General Motors in 1984, and proceeds from the oil and gas holdings he liquidated last year. Perot Systems is prospering, albeit with a reputation for hardball client solicitation. H. Ross Jr., 31, is successfully developing Alliance Airport, near Fort Worth, Texas.
PAUL SACHER, 84 **and family**	Frenkendorf SWITZERLAND	**$3.0**	**60% of Hoffman-LaRoche.** In 1933, Paul Sacher married Maja Hoffman, then-recent widow of Hoffman-LaRoche heir Emanuel Hoffman. Sacher paid his dues, though, working hard running the Swiss pharmaceutical giant. Little is known about Sacher's role in the company now, but it is rumored that he meets weekly with CEO Fritz Gerber. Maja died last year at the ripe age of 93.
KARL ERIVAN HAUB, 58 **and family**	Mülheim WEST GERMANY	**$2.9**	**100% of Tengelmann AG, Germany's largest supermarket chain; 53% of Great Atlantic & Pacific Tea Co. (A&P supermarkets).** Sounding like Kaiser Lear, Karl Haub has declared that he will cede control of his vast grocery empire to his three sons, Karl, George, and Christian, in 2007. Meanwhile, Tengelmann continues to grow with 3,340 stores and $21 billion in revenues. The environmentally aware Haub has been looking east (with Skala), and west (with Gateway), to flex his retail muscles. As for West Germany, many of the country's abundant "competing" grocery chains are still owned by one man: Karl Erivan Haub.
LORD ALAN SAINSBURY OF DRURY LANE, 88 **SIR ROBERT SAINSBURY,** 84 **LORD JOHN SAINSBURY OF PRESTON CANDOVER,** 62 **DAVID SAINSBURY,** 49	London ENGLAND	**$2.9**	**39% of Sainsbury's: supermarkets in Great Britain, hypermarkets, home and garden stores.** The family title commemorates the location of the first Sainsbury dairy shop, which opened in 1869 at 173 Drury Lane. They eventually landed on American shores with 66 Shaw's locations throughout New England. Alan and Robert, brothers, are joint presidents of the $12.3-billion-in-revenues company. David, who is Robert's son and the only one of the four without a title, is the richest of the Sainsbury clan with 22% of the company's stock. John, who is married to former ballerina Anya Linden, is chairman of the Royal Opera.
SIR JOHN MOORES, 94 **and family**	Formby ENGLAND	**$2.8**	**100% of Littlewoods Organisation: mail order, catalogue shops, financial services, retail stores, and Littlewood Football Pools.** This past year the Mooreses have been a family at war. Sir John's younger son, Peter, who controls 22% of the company stock, has his eye on the chairmanship. But his last term as chairman, from 1977 to 1980, coincided with a 77% decline in profits. John Jr. and his family own 37% of the outfit, but he has no interest in running the shop. He's into farming and cattle breeding. Meanwhile the company has appointed Leonard Van Geest as a nonexecutive caretaker chairman.
CARLO DE BENEDETTI, 56	Turin ITALY N	**$2.7**	**45% of Cofide: 41% of Olivetti, Europe's leading computer producer.** More than half of Cofide's $14 billion in sales last year came from Olivetti. But the financial wizard, who once briefly ran Fiat and whom the Italians call "the engineer" to distinguish him from Agnelli "the lawyer," has also been waging and winning (though at great cost) a war for Italy's biggest publisher, Mondadori. He is battling media magnate Silvio Berlusconi, and the smart money backs De Benedetti for the long haul.
FRIEDRICH KARL FLICK, 63	Munich WEST GERMANY	**$2.7**	**Proceeds from the sale of 10% of Daimler-Benz, 97% of Bucerus Steel, 28% of W.R. Grace, plus stakes in Feldmühle Paper and Dynamit-Nobel.** The cagey, cranky Flick hasn't said what he plans to do with the cash from selling hunks of various companies to Deutsche Bank. In the meantime, Flick gets flack from brazen nephews Mick and Muck over matters of inheritance and from his longtime companion, Ingrid Ragger, who announced this year that she and Friedrich were to wed. This came as news to the groom. So it still looks as if his two daughters from his first marriage will eventually get the loot.
LI KA-SHING, 62	HONG KONG	**$2.7**	**About 40% of Cheung Kong Holdings, which holds 40.3% of Hutchison Whampoa; commercial and residential property in Hong Kong, Canada, and the U.S.** Hong Kong's wealthiest man became the first-ever Chinese taipan with his 1979 acquisition of Hutchison Whampoa, a famous hong or trading house. Li's son Richard returned to Hong Kong last winter from Canada, where he had apprenticed himself to Gordon Capital Corp., an investment house in Toronto. When Gordon bought Columbia Savings & Loan Association's vast junk bond portfolio recently, Li put up half the money.

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KENKICHI NAKAJIMA, 69	Kiryu JAPAN	**$2.7**	**21.1% of Heiwa, the world's largest maker of pachinko machines; real estate.** Kenkichi Nakajima has spent the past 40 years popularizing pachinko—an upright version of pinball. He started the concern after World War II, wanting to build something that would promote leisure and concord among men. In fact, *heiwa* means peace. The Korean-born billionaire loves golf, and claims the putting and driving dexterity of a 30-year-old.
SILVIO BERLUSCONI, 54	Milan ITALY	**$2.6**	**100% of Fininvest: TV networks; 70.2% of Standa department stores.** Berlusconi and billionaire computer magnate Carlo De Benedetti have been slugging it out like bad guys in a spaghetti Western for control of Italian publishing giant Mondadori. Early gains for Berlusconi prompted political leaders to brand him a possible threat to freedom of expression, so diverse and powerful are Fininvest's media concerns. They help keep the lavish-living Berlusconi well entrenched in the ranks of Italy's rich and influential, however. Three of his five kids are the product of a liaison with Veronica Lario, a former actress.
AUGUST VON FINCK, 60 **and family**	Munich WEST GERMANY	**$2.6**	**Munich real estate; Merck Finck Bank; Löwenbräu breweries.** August is largely in control of Finck-related business transactions. His younger brother, Helmut, once a follower of Indian spiritual leader Bhagwan Shree Rajneesh, has finally made his decision for Mammon. He has been busy buying expensive racehorses in order to build a stable that he hopes will become Germany's finest.
KARL HEINZ KIPP, 66	Arosa SWITZERLAND	**$2.6**	**Proceeds from the sale of Massa variety stores; resort and commercial real estate.** This is one billionaire who knows how to spend. Having received $700 million in cash from selling his Massa stores, plus about $60 million a year until 2020 for the valuable real estate under each shop, Kipp can indulge his passion for collecting such five-star hotels as the Carlton in St. Moritz and the Eden Roc in Ascona. Indeed, when the Eden Roc nearly fell to speculators, cash-fat Kipp doubled his offer because he so loved the posh, stylish hotel.
OTTO BEISHEIM, 68	Baar SWITZERLAND	**$2.5**	**Metro International AG: 200 department stores throughout Europe; 60% of Pelikan office equipment manufacturers.** A late bloomer as a billionaire, Metro founder Otto Beisheim didn't get started until he was 40, and in 25 years built a retailing outfit with $22 billion in sales. Now he is rumored to be looking to drop Axel Springer, Germany's biggest publisher, into his shopping cart. Otto and his wife, German-born and childless, are Swiss citizens.
Y. Z. HSU, 79 **and family**	Taipei TAIWAN	**$2.5**	**Far Eastern Textile Group.** Hsu fled mainland China when it succumbed to Communist rule in 1949, leaving behind a textile factory in Shanghai. Once in Taiwan, he started a cement company and moved on to rayon, department stores, and more. His son Douglas has an MBA from Columbia University and helps Pop call the shots.
Y. C. WANG, 74 **Y. T. WANG,** 68 **and family**	Taipei TAIWAN	**$2.5**	**Formosa Plastics Group.** Wang started out in the lumber business but moved into chemical resins in the 1950s at the behest of American economic advisers when no other Taiwanese would enter the field. This year he ventured into uncharted territory again when he initiated talks with the mainland Chinese about opening a $5 billion petrochemical plant in Fujian. The Taiwanese government was not pleased, though, and the project is on hold.
LIEM SIOE LIONG, 74 **and family**	Jakarta INDONESIA	**$2.4**	**Full and partial ownership of 500 companies, including Indocement, Indosteel, Bank Central Asia Group, and Bogasari Flour Mills.** When revolt broke out in the Dutch East Indies in 1945, Liem, an immigrant from South China, began delivering medical supplies and munitions to the rebels. In doing so, he gained the friendship of a young officer named Suharto who eventually became President of the liberated land. Suharto granted Liem monopolies on the lucrative clove, flour, and cement trades, and lately Liem returned the favor, giving shares of his companies to Suharto family members.
EDMUND VESTEY, 58 **SAMUEL, LORD VESTEY,** 49 **and family**	Gloucestershire ENGLAND	**$2.4**	**Western United Investment Co.: Weddel Crown meat importers, JH Dewhurst meat retailers, Hong Kong Refrigerating Co.** With help from his brother, Samuel, Edmund runs a massive and secretive meat empire that is Britain's biggest. A beef ban resulting from reports of diseased cattle will dent the meaty profits of previous years. But the charitable Lord Samuel is likely to continue lending ponies to promising young polo players not able to afford their own. Edmund, joint master of the Puckeridge and Thurlow hounds, passes the time on his 100,000-acre Scottish estate.

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JOSÉ EMÍRIO DE MORAES FILHO, 63 **ANTÔNIO EMÍRIO DE MORAES,** 62 **MARIA HELENA DE MORAES,** 59 **EMÍRIO PEREIRA DE MORAES,** 58	São Paulo BRAZIL		**$2.3**	**100% of Indústrias Votorantim, Brazil's largest privately held industrial conglomerate.** Chronic high inflation and nightmarish bureaucracy continue to make Brazil a tough proving ground for free-marketers like the De Moraeses. Nonetheless, Votorantim, commanded largely by Antônio Emírio and José Emírio, grandsons of the founder, had revenues of $2.3 billion in 1989 and recently announced a two-year, $1.5 billion expansion strategy.
SUMNER REDSTONE, 67	Newton Center MASSACHUSETTS		**$2.3**	**100% of National Amusements Inc., which owns 84% of Viacom and 650 movie screens in the U.S. and Britain.** During World War II, Redstone was part of the elite group that broke Japan's military and diplomatic codes. But acquiring the distribution rights to *The Cosby Show* and *Roseanne* helped him crack the harder puzzle of picking media winners for a fickle American public.
HIROSHI YAMAUCHI, 62	Kyoto JAPAN		**$2.3**	**11.4% of Nintendo.** At the age of 21, Yamauchi quit college to take over the family card-game business. Begun in 1899 by his great-grandfather, the staid company needed a shot of 20th-century innovation. Yamauchi got into electronic games and today Nintendo is an obsession with young and old. Raised by his grandmother, he enjoys the quiet life with his wife and four children.
EDWARD J. DEBARTOLO, 81 **and family**	Youngstown OHIO		**$2.2**	**The Edward J. DeBartolo Corp.: commercial real estate and professional sports teams.** DeBartolo started in the real estate business at age 13 preparing estimates for his stepfather, an Italian-born contractor who was unable to read English. Today his oufit owns, both outright and jointly, close to 100 shopping malls, a score of community shopping centers, the four-time Super Bowl champion San Francisco 49ers, and the Pittsburgh Penguins hockey team. A devout workaholic, DeBartolo Sr. has been known to end memos with "I want your answer today."
JOHN T. DORRANCE III, 46 **BENNETT DORRANCE,** 44 **MARY ALICE DORRANCE MALONE,** 42	Devils Tower WYOMING Paradise Valley ARIZONA Coatesville PENNSYLVANIA		**$2.2**	**31.5% of Campbell Soup Co.** After young chemist J. T. Dorrance invented a unique condensing process in the late 19th century, the resulting soup stock he peddled in ten-ounce cans made him rich. Two generations later, his heirs are still getting rich off soup stock—but this time it's the kind traded on the Big Board. The three Dorrance grandchildren earn some $13 million apiece each year on their Campbell Soup shares. Serious intramural squabbling threatened to bring about the sale of Campbell to Quaker Oats last year, but for now the Dorrances appear steadfast about keeping the company independent.
WILLIAM R. HEARST JR., 82 **RANDOLPH A. HEARST,** 74 **and family**	New York NEW YORK San Francisco CALIFORNIA		**$2.2**	**40% of Hearst Corp.** Hearst is the nation's largest publisher of monthly magazines, with three of its better-known titles being *Cosmopolitan*, *Esquire*, and *Good Housekeeping*. Its newspapers have been a problem. In the past 12 months Hearst has closed the Los Angeles *Herald Examiner* and has been trying to buttress the flagship San Francisco *Examiner*, which slid Rosebud-like behind the competition.
HEIDI HORTON, 49	Croglio SWITZERLAND	N	**$2.2**	**Inheritance from Horton Department Stores and Horton Finanzverwaltung (asset management); real estate.** Helmuth Horton founded one of Germany's biggest department store chains, and British American Tobacco bought it in 1970. When Helmuth died in 1987, he left his widow, Heidi, with $150 million a year in pocket money. She has impressively elaborate homes in the Swiss Alps, New York, and the Caribbean.
ESTHER KOPLOVITZ, 39 **ALICIA KOPLOVITZ,** 37	Madrid SPAIN	N	**$2.2**	**98% of Construcciones y Contratas, one of Spain's largest construction firms; 21% of Banco Zaragozano; 10% of Cofir financial services; securities; real estate.** After fleeing Poland ahead of Hitler, Ernesto Koplovitz, Esther and Alicia's father, set up shop in Madrid cleaning the city's streets. He put his profits into buying land and later developed it. In the early 1970s, a decade after Ernesto died, his daughters married cousins, both lawyers named Alberto, who eventually took control of Conycon from their wives' godfather, Ramon Areces. But when the sisters suspected their husbands were unfaithful, they not only left "los Albertos" but demoted them in the company. Now the sisters run the $6 billion construction giant.
SERGIO MANTEGAZZA, 62 **GEO MANTEGAZZA,** 61	Figino SWITZERLAND	N	**$2.2**	**Globus Travel and Cosmos Tourama, U.S.-to-Europe travel group; Monarch Airlines; real estate.** Sergio and Geo's dad started out renting boats on Switzerland's Lake Lugano in 1928, soon expanding into limo and motor-coach service. A generation later, the Mantegazzas, along with associate Mario Albek, have built Globus-Cosmos into one of Europe's leading tourism firms.

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ROBERT MAXWELL, 67	London ENGLAND	**$2.2**	**52% of Maxwell Communications; 50% of Mirror Group Newspapers; financial and professional service companies.** There was furor at the *Mirror* last year when a cartoon in that London newspaper bore the message "F--- Maxwell" in near-microscopic print. Then Maxwell issued his own challenge in May when he launched a pan-European weekly called, aptly enough, *The European*. Son Ian runs Official Airline Guides, which Maxwell bought from Dun & Bradstreet in 1989 for $750 million. Czech-born Maxwell (né Jan Ludwig Hoch), whose ability to re-create himself is legendary, recently bought a stake in composer Andrew Lloyd Weber's production company, Really Useful Group.
JOHN RICHARD SIMPLOT, 81	Boise IDAHO	**$2.2**	**100% of J.R. Simplot Co.: potato processors, cattle, fertilizer, frozen foods; 18% of Micron Technology.** Simplot dropped out of high school in the 1920s, invested in hogs, and later sold dehydrated potatoes and onions to the government during World War II. Today he lords over a $1.5 billion agribusinesses giant, supplying McDonald's with more than half its fries and bringing some 300,000 head of cattle to market yearly. Modest, temperate, and patriotic, "Mr. Spud," as his license plate reads, has no intention of slowing down despite his age: "I have a ball every day!"
LAURENCE ALAN TISCH, 67 **PRESTON ROBERT TISCH,** 64 **and family**	Rye NEW YORK Harrison NEW YORK	**$2.2**	**26% of Loews Corp.** The Tisch brothers and their dad checked into the hotel business after selling the family's summer camp and eventually diversified into broadcasting, financial services, and more. The Tisch-owned Regency Hotel in New York is the birthplace of the infamous "power breakfast." The brothers' primacy as New York University's deepest pockets has been challenged by Leonard Stern (see below), who doled out $30 million for a business school bearing his name. But Larry and Bob appear to be ahead on points with an eponymous hospital and school of arts. Seven children between them.
EDWARD GAYLORD, 71	Oklahoma City OKLAHOMA	**$2.1**	**Oklahoma Publishing and Gaylord Broadcasting.** Gaylord took charge at Oklahoma Publishing in 1974 as a sprig of 55 when his father, who bought the *Daily Oklahoman* just after the turn of the century, died at the age of 101. From his heartland headquarters, the conservative media baron eyes the Eastern U.S. with skepticism, believing it to be a hotbed of liberals. He and his wife, Thelma, have four children.
KARL KAHANE, 70	Vienna AUSTRIA	**$2.1**	**Industrie Holding Montana AG, mineral concerns.** After a bitter seven-year court battle, Kahane claimed sweet victory last year and acquired the reluctant Veitscher Magnesitwerke, the world's largest producer of magnesite, a derivative of magnesium, for about one-fifth of its actual value. Kahane doesn't like to overpay when it comes to taxes either. He set up his business in Zurich to avoid Austria's high tariff, but home is still Vienna.
SAMUEL JAYSON LEFRAK, 72	New York NEW YORK	**$2.1**	**Real estate; 100% of Lefrak Oil & Gas Organization; 100% of Lefrak Entertainment; art.** In 1961, long before there was anything named for Donald Trump, an aggressive young builder of middle-income housing christened his development Lefrak City. Sam LeFrak has since become the country's leading residential landlord; one in 16 New Yorkers, for instance, lives in a LeFrak-built dwelling. Though the Master Builder prefers classical, his recording outfit recently scored big in rap music, which Sam regards as "urban poetry." This septuagenarian still rises at 4:30 to get a start on the day's business.
SULIMAN SALEH OLAYAN, 71	Riyadh SAUDI ARABIA	**$2.1**	**Olayan Group: agricultural and consumer products, finance, investments, real estate, trading, Saudi Coca-Cola franchise, and more.** Olayan started as a transportation dispatcher for Aramco, and won the respect of his employers by memorizing the names of thousands of parts. He eventually expanded into manufacturing, financial services, and real estate. Quiet, even characterized as "passive" in his business dealings, he lives in Riyadh with his American-born wife, Mary. His son and three daughters are all Olayan Group directors.
LEONARD NORMAN STERN, 52	New York NEW YORK	**$2.1**	**100% of the Hartz Group Inc.** The clear leader in the pet care industry, Hartz Mountain sells some $425 million each year of cat toys, dog bones, and special, low pH, ultra-absorbent cat litter. Too mundane for your tastes? Stern's empire also sells cheap knockoffs of expensive perfumes and carpet steamers and built 35 million square feet of office and industrial space on what was once New Jersey swampland. It's all been catnip to Leonard except for *7 Days*, his weekly magazine that went belly up earlier this year. Wed to model Allison Maher, Stern has three children from his first marriage.

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WALTER H. ANNENBERG, 82	Wynnewood PENNSYLVANIA	**$2.0**	**Proceeds from the 1988 sale of Triangle Publications, including *TV Guide*; the Annenberg Collection, impressionist and postimpressionist art; nine million shares of General Motors.** Annenberg came to fame and great fortune by starting *TV Guide*, which he built into one of the world's top-grossing magazines. Though he recently paid the third-highest price ever for a painting when he bought Picasso's *Au Lapin Agile* last November for $40.7 million, Annenberg may give away more money than he spends. This year he donated $50 million to the United Negro College Fund, and more than $300 million to the University of Pennsylvania.
LILIANE BETTENCOURT, 67	Paris FRANCE	**$2.0**	**25% of L'Oréal: Anais-Anais perfume, Lancôme cosmetics; 4% of Nestlé; 30% of Cosmair.** Mme. Bettencourt and husband André control the vast fortune left them by her father, a brilliant chemist named Schuller who started a soap, paint, and cosmetics concern. Nestlé, part of the Bettencourt portfolio, owns some 49% of the beauty giant to foil raiders.
DONALD BREN, 58	Newport Beach CALIFORNIA	**$2.0**	**93% of Irvine Co., real estate.** Portofino on the Pacific is Donald Bren's plan for the 100 square miles of sumptuous, largely undeveloped Orange County land he acquired when he bought Irvine Co. in 1983. With characteristic attention to detail, he even considers the reflection in the windows of his office towers. Bren is busy developing the property he calls his "raw canvas" into a model American community of the 21st century. Handsome and retiring, he is twice divorced and has three children.
Y. F. CHANG, 63	Taipei TAIWAN	**$2.0**	**70% of Evergreen International Corp., the world's largest container shipping company.** The secretive, enigmatic Chang is now in the process of setting up a new airline, Eva Airways. The nascent carrier has already been granted landing rights in Austria, Malaysia, Vietnam, and elsewhere, and is challenging the stodgy, quasi-government-run China Airlines. Spiritually diversified as well, Chang practices Yikuantaoism—a pastiche of several religions including Buddhism and Taoism.
ANTON CASPAR RUDOLPH DREESMAN, 67	Laren NETHERLANDS	**$2.0**	**Major stake in Vendex International department and clothing stores throughout Europe such as Vroom & Dreesman, and travel concerns; a stake in B. Dalton Bookseller; 33.5% of Dillard Department Stores.** Both Vendex and its stroke-impaired founder, Anton Dreesman, are ailing of late. Profits last year were less than half the $120 million they were in 1987. The Vendex chief, a former professor of economics, made the news several years ago by hiring then quickly firing a successor whom he was told, via fictive prophecy, would sell the company out after Dreesman died.
INGVAR KAMPRAD, 63 **and family**	Epalinges SWITZERLAND	**$2.0**	**IKEA home furnishings.** Kamprad has developed the mail-order outfit he started at 17 into a home furnishings giant. Today, roughly one in four Europeans buy their living room and bedroom sets from IKEA, and America appears ready to acquiesce in the near future. The Swedish-born tax exile has sworn publicly that his three children will inherit little from him.
GENSHIRO KAWAMOTO, 58	Tokyo JAPAN	**$2.0**	**Marugen Co.: real estate in Tokyo, Hawaii, and California.** Kawamoto, a developer of residential and commercial real estate, shrugs off warnings of ubiquitously inflated land prices, saying he knows how to pick good value even in inflated markets like Tokyo and Hawaii. A lifelong bachelor, Kawamoto plans to establish a Japanese-American student exchange foundation to compensate for never having had children of his own.
SULIMAN ABDUL-AZIZ AL RAHJI, 68 **and family**	Riyadh SAUDI ARABIA	**$2.0**	**50% of Al Rahji Banking & Investment Corp.; real estate; agricultural enterprises.** Since the Koran condemns interest as usury, the Al Rahjis were not obliged to pay anything for the deposits they received from thousands of devout Muslims to invest as they saw fit. The company has gone public in the past decade, though, and must now provide a return on equity.
BARON EDMOND DE ROTHSCHILD, 64 **and family**	Geneva SWITZERLAND N	**$2.0**	**Compagnie Financière Benjamin & Edmond de Rothschild, Geneva; 7% of Hachette and holdings in other French corporations; real estate.** Baron Edmond is heir to two of the five main branches of the famous Rothschild banking family. The modest-size Banque Privée Edmond de Rothschild channels money into Rothschild's other banks scattered about the Continent. French-born Edmond lives modestly for his means, avoiding the yacht-and-polo scene. Had he not inherited the gorgeous Château de Pregny, he wouldn't live there.

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EDMOND J. SAFRA, 58	Geneva SWITZERLAND		**$2.0**	**33% of Republic New York Corp.; cash.** A Brazilian national of Syrian-Jewish extraction, Safra owns banks that cater ever-so-discreetly to the world's megawealthy. Leaving his father's successful Banque Safra Frères in Lebanon in the late 1950s, the Beirut-born billionaire went to Geneva and started what later evolved into Trade Development, Switzerland's largest private bank.
GRETE SCHICKEDANZ, 74	Furth WEST GERMANY		**$2.0**	**100% of Quelle, mail order and retail stores.** The German mail-order giant founded by Grete's late husband, Gustav, suffered some reverses recently—top-level personnel changes and measly 1.8% profit growth. Recovered from health problems, Schickedanz is back to supervise management, and Quelle has spruced up its catalogues, cut money-losing operations, and created a new catalogue with Cyrillic writing that is aimed at Soviet consumers.
RINJI SHINO, 81	Osaka JAPAN		**$2.0**	**Diverse holdings in real estate, restaurants, gas stations, manufacturing, and services.** Rinji Shino is about as far from nouveau as riche can get. His is the 32nd generation of a family descended from the 12th-century imperial Taira clan. Shino devotes time to culture as well as business, collecting Japanese art and French furniture, and devouring novels in Spanish and French.
BARON HANS-HEINRICH THYSSEN-BORNEMISZA DE KASZON, 69	Lugano SWITZERLAND		**$2.0**	**100% of Thyssen-Bornemisza Group; art; real estate.** Baron Heini, as he is known to intimates, inherited both his family's mining concern and art collection in 1947, and has expanded both in subsequent years. But the Baron shows little interest in running the $3-billion-a-year business anymore and leaves day-to-day operations to his eldest son, George Heinrich: "My son takes care of . . . earning money. I spend it—mainly for art." The vast T-B collection, worth some $1.5 billion, contains works by Titian and others. Thyssen and his Spanish fifth wife, Tita, divide their time between Switzerland and Madrid.
TED ARISON, 66 **and family**	Miami FLORIDA		**$1.9**	**75% of Carnival Cruise Lines Inc.** From a bankrupt, one-ship company just 15 years ago, Carnival Cruise Lines has surfaced as the largest, best-known, and most profitable operator in the industry. In the mid-1970s the Israeli-born Arison installed a casino to complement the discothèques and nightclubs aboard his line's sole cruiser, the *Mardi Gras*, and Carnival has successfully pitched its cruises as entertainment—not just travel—ever since. His son, Micky, is CEO of the $1.1 billion company and his daughter, Shari, is a director.
MARVIN DAVIS, 65	Los Angeles CALIFORNIA		**$1.9**	**Davis Cos. Group: Davis Entertainment Co., Davis Oil Co.; Miller-Klutznick-Davis-Gray Co., real estate development.** Just before energy prices began to dive in the 1980s, Davis presciently sold off most of the family oil business, then struck it rich again following a takeover bid for UAL. His sale of a 3% stake in the airline brought the New Jersey–born Davis close to $100 million.
JOHN CRAIG EATON, 53 **FREDRIK STEFAN EATON,** 52 **THOR EDGAR EATON,** 47 **GEORGE ROSS EATON,** 44 **and family**	Toronto CANADA	N	**$1.9**	**Eaton department stores; 52.7% of Baton Broadcasting; real estate.** Compared with its American counterpart, Canada's retail market is healthy. As a result, Eaton's hundred or so department stores earned an estimated $152 million in 1989. Baton Broadcasting, Canada's largest non-state-owned television network brought in $50 million. The several family members live in luxurious homes in Toronto's affluent Forest Hill district. They have become intensely security conscious since a daughter was nearly kidnapped several years ago.
CARL C. ICAHN, 54	Bedford NEW YORK		**$1.9**	**100% of ACF Industries, railcar producers/lessors; 90% of Trans World Airlines; 13.26% of USX voting stock.** Could *Dr. Jekyll and Mr. Hyde* be updated as *The Carl Icahn Story*? The good Icahn helped settle a 1988 controversial takeover melee between Pennzoil and Texaco, netting some $600 million in the process—pretty good salt for a peacemaker. Then he sought to restructure USX, but lost the ensuing proxy battle to management. Bright and amiable, he was born in Brooklyn to parents of modest means and helped put himself through Princeton, where he majored in philosophy. Married, two children.
LAURANCE S. ROCKEFELLER, 80 **DAVID ROCKEFELLER,** 75	New York NEW YORK		**$1.9**	**Family trusts; stocks and bonds; real estate; venture capital.** The Rockefeller trusts have a lot of mouths to feed—83 in all. No wonder the family trust sold one of its toniest assets, a 51% interest in the Rockefeller Group, part owner of New York City's Rockefeller Center and Radio City Music Hall, to Mitsubishi Estate Co. The family says it isn't cashing out, but it's apparent that the dynasty created by John D. Rockefeller Sr., founder of Standard Oil, is undergoing change. The sale may enhance the family's ability to continue its longstanding tradition of philanthropy, however.

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KLAUS J. JACOBS, 54	Küsnacht SWITZERLAND	**$1.8**	**Proceeds from the sale of 57% of Jacobs Suchard coffee and chocolate producers; 100% of E.J. Brach.** Jacobs formed Jacobs Suchard in 1982 when he merged his family's Bremen-based coffee company with Interfood chocolatiers. A rash of acquisitions during the 1980s allowed him to create a multinational chocolate, confectionery, and coffee empire that he upped and sold to Philip Morris in June for $5.4 billion. With no announced plans for his share of that big pile of gumdrops, the German-born billionaire will continue to busy himself running Brach (the U.S. candy producer), donating to the Boy Scouts, and improving his equestrian skills.
JOHN SPYROS LATSIS, 80 **and family**	Rabigh SAUDI ARABIA N	**$1.8**	**Societé Generale pour l'Industrie: shipping, construction and oil refineries; Private Bank & Trust Co.** It has been said that John Latsis became rich because he was the first European businessman to understand the Arab mind. Indeed, after buying his first ship in 1955, Greek-born Latsis established contact with potential customers from the Middle East by waiting hours—days, if necessary—to be received. Perseverance paid off: His current holdings are so vast they are called the "galaxy" by Genevans in the know. Latsis has been known to conduct business from his "swimming headquarters," a pair of converted freighters anchored at Jiddah. Married, three children.
SALVATORE LIGRESTI, 58	Milan ITALY	**$1.8**	**77% of Premafin; stakes in a wide range of industries and services, including construction, insurance, plumbing ceramics, merchant and investment banking, tires, and hotels.** Ligresti's career began only 12 years ago with a 35% stake in SAI, Italy's fourth-largest insurance concern. That investment has appreciated in value some 3,700%. He also owns construction giant Grassetto—a company he once hoped to work for. Convictions in recent years for zoning violations prompted the Paterno-born magnate to proclaim his innocence: "I never received favors in my construction activities. They are too difficult to obtain and I didn't need them." He is appealing the convictions. Married, three children.
DAVID PACKARD, 78 **and family**	Los Altos Hills CALIFORNIA	**$1.8**	**15.3% of Hewlett-Packard.** From $538 in cash in 1939 to $12 billion in sales in 1990—such is the slow rise by Silicon Valley standards of Hewlett-Packard Co., as famous for its humanistic approach to management as it is for its ubiquitous laser printers and desktop calculators. David Packard is still H-P's chairman, and both founders continue to be leaders in charitable giving. If asset building goes according to schedule, the David and Lucile Packard Foundation will become one of the five biggest philanthropic institutions in the country. Packard, a former U.S. deputy secretary of defense, is widowed and has four children.
DANIEL SWAROVSKI **MANFRED SWAROVSKI**	Wattens AUSTRIA N	**$1.8**	**100% of Swarovski International Holding, the world's largest maker of rhinestones; 50% of Zale Corp.** Daniel and Manfred's grandfather was a glass cutter who expanded during World War I into selling polishing wheels and abrasives. The glittering stones produced by SIH are of such high quality that they are often likened to real gems.
HIROSHI TERAMACHI, 66	Tokyo JAPAN	**$1.8**	**22.3% of THK Co., makers of bearing-related products.** This inventor of ball bearing products started his first company, Nippon Thompson, in 1950, but only when he took THK public last year was he able to vault into the ranks of the superrich. Radio-guided calisthenics help keep Teramachi from ballooning like his bank account.
OCTAV BOTNAR, 75	Villars-sur-Ollon SWITZERLAND N	**$1.7**	**Nissan U.K., Britain's sole Nissan distributorship; proceeds from the sale of Nissan Switzerland; real estate.** Rumanian-born Botnar purchased the Swiss Nissan importing operation just before that automaker's cars began booming. From 1979 to 1981 imports of Nissan-made Datsuns more than doubled their share of the Swiss market (to 5.7%). Though registered as a resident of Switzerland for tax purposes, Botnar spends most of his time in Britain, with a house near his company's Worthing headquarters just south of London.
CHARLES FEENEY, 59	London ENGLAND	**$1.7**	**40% of Duty Free Shoppers Group; 100% of General Atlantic Holdings, a Bermuda-based company with stakes in dozens of businesses; hotels; retail stores; publishing; oil and gas.** After graduating from Cornell's hotel administration school, Feeney and his classmate Robert Miller founded Duty Free Shoppers. Duty-free shops are the salvation of passengers stuck in airports between flights. Today, Feeney's is the largest such operation, with sales around the $2 billion mark and locations in Honolulu and throughout the Far East. He lives in London with his French wife and five children.

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TAMESABURO FURUKAWA, 100	Nagoya JAPAN	**$1.7**	**Nippon Herald Films, distributor of movies and owner of a chain of cinemas in Japan; Herald Group: golf courses, ski areas, and restaurants.** No early retirement for Tamesaburo Furukawa. The oldest billionaire still serves as chairman of the film company he founded after Japan's 1920 depression, when he decided that movies were less susceptible to economic downturns than other pursuits. Furukawa family members assist the centenarian in running Nippon, which is Japan's leading distributor of foreign flicks.
YUSUKE MIYAMA, 45	Tokyo JAPAN	**$1.7**	**57.6% of MDI Co.: 50,000 apartments in Japan, mostly in the Tokyo area.** Yusuke Miyama started out as a real estate agent. Today he's a substantial landlord. His goal is to have $7 billion in sales by the year 2000. Recent projects include resorts at home and in Guam—a popular vacation spot among the Japanese—as well as hotels and sport clubs.
HARRY B. HELMSLEY, 81	New York NEW YORK	**$1.7**	**New York commercial and residential real estate.** Harry Helmsley's story is almost mythic: As a young man he started at the bottom, collecting rents in Hell's Kitchen, and later wound up at the top of New York commercial real estate. That's when he met the notorious Leona, who now faces four years in prison and a fine of $7.2 million for evading taxes. Is she any kind of wife for a Quaker, Harry?
WILTON R. STEPHENS, 82 **JACKSON T. STEPHENS,** 67 **and family**	Little Rock ARKANSAS N	**$1.7**	**100% of Stephens Group, encompassing Stephens Inc. investment banking, 31% of Worthen Banking Corp.; gas; real estate; cash.** The Stephens brothers spent the past 50 years building a small-time bond outfit into a respectably sized investment bank. Four years ago Jack's 33-year-old son Warren stepped in as CEO of Stephens Inc. to take the operation national. Warren is living up to his genes; he has doubled revenues in the past two years. Now local folk heroes, the brothers are active in Arkansas politics.
R.E. "TED" TURNER III, 51	Atlanta GEORGIA	**$1.7**	**44% of Turner Broadcasting System.** Despite recent leverage problems, and the best wishes of his enemies, the mustachioed "Captain Outrageous" has flourished: TBS shares are among the hottest on Wall Street, tripling in value over the past two years. He lives modestly in Atlanta but owns a 130,000-acre ranch called "Flying D" in Montana. Twice divorced, Turner has five children and is currently involved with Jane Fonda.
PAUL ALLEN, 37	Seattle WASHINGTON N	**$1.6**	**17.3% of Microsoft computer software; Asymetrix Corp.; the Portland Trail Blazers professional basketball team.** Allen co-founded Microsoft with prep-school buddy Bill Gates in 1975. While the company mushroomed into a $1-billion-a-year operation, Allen battled Hodgkin's disease, from which he is now recovered. Life has been looking up ever since. His software startup, Asymetrix, launched its first product this year, a so-called software construction set called ToolBook, and his Portland Trail Blazers made it to the NBA finals. Like his erstwhile partner Gates, Allen is single.
LAWRENCE, LORD KADOORIE, 91 **HORACE KADOORIE,** 88 **MICHAEL KADOORIE,** 50	HONG KONG	**$1.6**	**69% of Hong Kong & Shanghai Hotels Co.; 25% of China Light & Power Co.; diverse investments abroad; Hong Kong real estate.** Of Iraqi-Jewish descent, the Kadoorie clan has been in Hong Kong since the late 19th century. The family has become a worldclass hotelier, owning the New York Peninsula, the Portman in San Francisco, and Beverly Hills' Belvedere.
GEORGE STAVROS LIVANOS, 61	London ENGLAND	**$1.6**	**Scres Shipping and Ceres Hellenic Shipping Enterprises; cash; art.** Though he has an entire island in the Aegean to himself, Greek-born Livanos calls London home. After inheriting Greece's largest shipping fleet from his father in 1963, he went on to become an innovator in shipping storage techniques. Livanos has also shown great concern in environmental issues and was instrumental in forming the Hellenic Marine Environment Protection Association.
HAROLD C. SIMMONS, 59	Dallas TEXAS	**$1.6**	**88% of Valhi: sugar, chemicals, timber, fast-food restaurants; securities; real estate.** A self-proclaimed corporate raider, Simmons began his empire building with the purchase of a single pharmacy in 1961. After opening another 99 stores he sold out to Jack Eckerd Corp. in 1973 for $50 million of Eckerd stock, only to see his holdings plummet 75% when he sold the stock two years later. He took what was left and bought Valhi in a bitter bidding war. A longtime arthritis sufferer, Simmons donated $41 million to the University of Texas Southwestern Medical Center last year, one of the country's leading centers for arthritis research.

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MICHELE FERRERO, 66	Brussels BELGIUM N	**$1.5**	**80% of Ferrero, one of the world's largest confectioners.** Ferrero's grandfather Pietro struck a sweet tooth when he concocted a hazelnut-based chocolate substitute that became Nutella. Michele, who took over the company at 24 after his father died of heart disease, puts in 15-hour days, including Saturday, and roams supermarkets to ask shoppers if they like his products, which include Tic-Tac mints. Ferrero, his wife (a former employee), and two sons (both employees) moved to Belgium in 1975, fearing kidnappers in their native Italy.
ERNEST GALLO, 81 **JULIO GALLO,** 80	Modesto CALIFORNIA	**$1.5**	**100% of E. & J. Gallo Winery.** Dionysus himself would envy the Gallo brothers' share of America's wine market: a heady 33%. No other domestic vintners come close. In 1933 the Gallo brothers started their own small winery with $5,000 and a few pamphlets on winemaking borrowed from the library. Today Gallo products flow to the tune of roughly $1 billion each year. Julio's son Robert, 56, oversees much of the day-to-day production. There are three other children between the two brothers.
HANS LIEBHERR, 75 **and family**	Bulle SWITZERLAND N	**$1.5**	**100% of Liebherr International AG: machinery and heavy equipment, cooling systems, hotels.** Equipped with a brilliant mind for technological innovation, Liebherr, German by birth, began amassing his fortune after World War II by selling an easy-to-use, transportable crane in his war-ravaged home country. Today his company is a leading manufacturer of construction vehicles, after Caterpillar and Komatsu. Liebherr operates without benefit of desk or secretary, running the company with his five co-owning children. He has no plans to retire "until the big vacation arrives."
DAVID H. MURDOCK, 67	Los Angeles CALIFORNIA	**$1.5**	**100% of Murdock Development Co.; 23% of Castle & Cooke; Flexi-Van Corp.** Born poor, Murdock dropped out of school in the ninth grade. After a hitch in the Army during which he voraciously read biographies of great businessmen, he headed west to Phoenix to make and lose his first fortune in that city's booming postwar real estate market. He moved on to California and diversified his holdings into textiles (Cannon Mills) and food (Castle & Cooke). Now chairman of C&C, Murdock is considering selling off its Dole Food Co.
SHEIKH ZAYED BIN SULTAN AL NAHAYAN, 74	Abu Dhabi UNITED ARAB EMIRATES	**$1.5**	**Oil; investments.** In addition to his position as President of the United Arab Emirates, Zayed is the ruler of Abu Dhabi. He hails from the once remote desert hamlet of Al Ain where his father built both the Jahili fortress and its adjoining camel market 80 years ago.
SIR YUE-KONG PAO, 71	HONG KONG	**$1.5**	**65% of World International Ltd.; Lane Crawford department stores; cash.** The traditional Hong Kong business community is not accustomed to female CEOs, which is a problem for Y. K. Pao, who has four daughters to inherit his commercial holdings. Their names—Annie, Bessie, Cissy, and Doreen—make them sound more like extras in a Mack Sennett two-reeler than the offspring of an Asian tycoon. At his death, their experienced, well-educated husbands will no doubt take greater control of the empire they are already instrumental in running. The Pao group recently sold its 37.8% of Dragonair and 10% of Standard Chartered Bank.
MARTHA GILMORE PARFET, 65 **RAY T. PARFET JR.,** 67 **WILLIAM U. PARFET,** 43	Kalamazoo MICHIGAN N	**$1.5**	**12% of Upjohn Co.** In 1886, Dr. William Upjohn and his brother devised a way to manufacture pills with an extended shelf life, and Upjohn Co. was born. It remained solely in family hands until it went public 32 years ago. William is an Upjohn executive VP, and Ray, the former chairman, sits on the board, though Martha, Ray's wife and the granddaughter of the founder, does not.
MARC RICH, 55	Zug SWITZERLAND	**$1.5**	**Marc Rich & Co. commodities trading.** A fugitive from Uncle Sam, Rich has wrapped up a good hunk of the world aluminum market, cutting deals with KaiserTech and the Jamaican government for bauxite. Luxury hotels in Madrid and condos on Majorca round out the Belgian-born billionaire's portfolio, making him Rich indeed.
JACK RUDIN, 66 **LEWIS RUDIN,** 63	New York NEW YORK N	**$1.5**	**Rudin Management Co., Manhattan real estate.** Jack and Lewis Rudin carry the flag for New York City—and not just in good times. When the Big Apple got bruised in the 1970s, the Rudins gallantly paid their taxes early to help keep city coffers filled. Civic-minded Lewis founded the Association for a Better New York and is fond of writing letters to the New York *Times* scolding those who don't believe in the city's future. Unlike some other Manhattan developers, the Rudin brothers still own virtually every building they ever put up.

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PRINCE JOHANNES VON THURN UND TAXIS, 64	Regensburg WEST GERMANY	$1.5	**Fürst Thurn und Taxis Bank; vast tracts of forest land; real estate in Brazil, West Germany, and Canada; 100% of Produco, a rare metals supplier; breweries; art; and castles.** "Johnny TNT" has been figuring out how to milk his vast but unexploited holdings for cash. Back in the good old 15th- and 16th-century days, coin was easier come by—the Thurn und Taxis clan monopolized the Hapsburg postal routes. The ailing prince, whom his high-living wife calls "Goldie," is also worried about matters of succession; his heir, Prince Albert, is only 7 years old.
LESLIE WEXNER, 53 **and family**	Columbus OHIO	$1.5	**34.1% of the Limited; 2.9% of Sotheby's Holdings.** A slim, energetic workaholic whose favorite word seems to be "growth," Leslie Wexner has sewn up some 5% of the $50 billion women's clothing market. When he's not preoccupied with silk or rayon, Wexner concentrates on canvas, having amassed a formidable collection of contemporary art. He is a bachelor and the main woman in his life seems to be mom, Bella, who sits on the Limited's board.
HENRI ANDRE, 52 **and family**	Prilly SWITZERLAND	$1.4	**Andre & Cie: banking, commodity trading, barter, hardware and machine tool manufacture, shipping, argibusiness.** This constellation of worldwide business concerns goes to great lengths to disguise its holdings. Included in the secretive galaxy: Kansas-based Garnac, thought to be the third-largest grain trader in the world. Despite their riches, the Andres support a religious sect called the Plymouth Brothers, whose adherents practice austerity.
JACK KENT COOKE, 77	Middleburg VIRGINIA	$1.4	**Proceeds from the sale of Cooke Cablevision; Los Angeles *Daily News*; Washington Redskins; real estate.** Once a doggedly persistent encyclopedia salesman, Cooke eventually created his own media empire that also included a professional football team and the art deco Chrysler Building in midtown Manhattan. Family matters have just been doggy. Cooke's third marriage—to a bride some 40 years his junior—ended recently in divorce. However, the billionaire won the first round of the resulting suit for child support, saving himself $29,040.
HUGO ERB, 72 **and family**	Winterthur SWITZERLAND	$1.4	**Erb Group: Herfina car importers, Uniwood manufacturing, Unifina financial services, and Volkart coffee trading.** Taking the profits from his Mitsubushi, Ford, Mercedes, and Suzuki distributorships, Erb has diversified his company into a $2.3 billion concern. Sons Rolf, 39, and Christian, 31, help Dad keep shop.
WALTER HAEFNER, 80	Küsnacht SWITZERLAND	$1.4	**Careal Holding: 100% of Amag car importers and 20.5% of Computer Associates International.** One of seven sons of a poor missionary to Tibet, Young Haefner began to fill his pockets when he counteracted the World War II fuel shortage with charcoal generators. Today he owns not only lucrative Volkswagen, Porsche, and Audi dealerships throughout Switzerland but also the land under them. Piano, orchids, and thoroughbreds round out his interests.
RAY HUNT, 47 **and family**	Dallas TEXAS	$1.4	**100% of Hunt Oil Co.; real estate; agribusiness.** A product of H. L. Hunt's second family, and his youngest son, Ray was named sole executor of his father's estate when the old man died in 1974. Subsequent family friction led Ray to split the inheritance with his half-brothers Nelson Bunker, Herbert, and Lamar a year later. Considered the "nice" Hunt as opposed to his bankrupt half-brothers Nelson and Herbert, Ray has discovered five oil fields in Yemen and has petroleum interests in Chile, Laos, Guyana, Argentina, France, Canada, and the North Sea.
JACQUES MAUS, 60 **BERTRAND MAUS,** 58	Geneva SWITZERLAND Geneva SWITZERLAND	$1.4	**50% of Maus Frères, Switzerland's largest retail chain; 42% of Printemps; 100% of P.A. Bergner department stores; 100% of Carson Pirie Scott & Co.** Like their cousins and longtime partners the Nordmanns (see below), the Maus family became involved in retailing nearly a century ago with a notions shop that granddad Ernest started in Bienne, Switzerland. Leon Nordmann later used Ernest and his brother Henri as suppliers for a Lucerne-based department store. And when Leon's son Robert tied the knot with Simone Maus, Ernest's daughter, more than ribbon held the two families together.
BRUCE R. McCAW, 44 **CRAIG O. McCAW,** 41 **JOHN E. McCAW JR.,** 39 **KEITH W. McCAW,** 36	Kirkland WASHINGTON	$1.4	**33% of McCaw Cellular Communications.** When he was 23, Craig began running the lone cable TV outfit left to the family by his father. In two decades the risk-taking, philosophizing chairman of McCaw Cellular Communications grew to command the greatest hunk of this country's cellular telephone market, having snatched LIN Broadcasting away from BellSouth, his nearest competitor. Craig's brothers are McCaw directors.

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GERARD NORDMANN, 60 **PHILIPPE NORDMANN,** 58	Geneva SWITZERLAND Geneva SWITZERLAND		**$1.4**	**50% of Maus Frères.** Now in its third generation, the Nordmann retailing dynasty is alive and well. Gerard handles finance, while his brother does the marketing. Philanthropic Philippe is a little eccentric: "Occasionally I eat with a plastic spoon. And I smoke cigarettes only every other year. It helps keep costs down."
KERRY PACKER, 53	Melbourne AUSTRALIA		**$1.4**	**Consolidated Press Holdings.** Australia's richest man started his ascent to ten digits in 1974 after buying out brother Clyde's share of the family publishing business started by their imperious father Sir Frank Packer. A huge, augmentative man, the 6-foot-4, 242-pound Packer has a passion for polo—pity the poor pony—and poker. Both Packer children work for the company, daughter Gretel as a journalist, son James in magazine finance.
GIAMPIERO PESENTI, 69	Bergamo ITALY	N	**$1.4**	**44% of Italmobiliare: steel, financial services, cement, and publishing.** When he took over Italmobiliare after his father's death in 1984, the inexperienced Pesenti was not given long to destroy what Dad had built. Though he was a grandfather at the time, the Italian press dismissed him as "Junior." But the prudent Pesenti instead came into his own among the handful of individuals who control the Italian economy. Giampiero's son is in the business, too, in an entry-level position.
MADELEINE DASSAULT, 89 **SERGE DASSAULT,** 65 **and family**	Paris FRANCE		**$1.3**	**50% of Dassault Aviation; 49% of Serge Dassault Electronics; real estate; construction; film studios; forestry; publishing; and the Saint-Emilion vineyards.** Madeleine and her reclusive son Claude seem content to sit and watch their stake in Dassault Aviation bear dividends. But her other son, Serge, continues to struggle against the government's desire to nationalize the remaining 50% of Dassault Aviation. Fortunately, Serge Dassault Electronics is France's leading supplier of ATM machines.
KING HASSAN II, 61	Rabat MOROCCO		**$1.3**	**Omnium Nord Africain: mining, manufacturing, real estate, and services; hotels, including the Royal Mansour in Casablanca.** Morocco's king is known as Commander of the Faithful because he is said to be descended from the Prophet Mohammed. Bright, well-educated, and highly Western (he prefers speaking French to Arabic), Hassan quickly shed his playboy ways when he became King in 1961 and has since emerged as a powerful, competent, and respected ruler. His son-in-law Fouad Filali runs Omnium. The sovereign, who has survived several coup and assassination attempts, is in remarkable health for a chain-smoker with asthma and intestinal cancer.
ALFRED HENRY HEINEKEN, 66 **and family**	Noordwijk NETHERLANDS		**$1.3**	**25% of Heineken breweries.** Though he was retired since 1989, Freddy Heineken's influence at the brewery his grandfather founded remains strong. But some top level employees at the brewery are packing it in. Last summer Freddy wooed the residents of St. Moritz, where a local committee opposed his plan to bulldoze a local factory.
PHILIP H. KNIGHT, 51	Beaverton OREGON	N	**$1.3**	**34% of Nike Inc.** With help from John McEnroe, Michael Jordan, and a staff of biomechanical experts, Nike Inc. has become the champ of the athletic footwear Olympics, running away with some 28% of the market and enjoying sales of over $2 billion. The stock has performed its own waffle-soled feats, recently leaping 50% over last year's average. Knight is a professed Asiaphile. He is married and has two children.
KEITH RUPERT MURDOCH, 59 **and family**	New York NEW YORK		**$1.3**	**45% of News Corp.** Freighted with $6 billion in debt, News Corp. trimmed its bulk this year by selling its supermarket tabloid the *Star*, book publisher J.B. Lippincott, and part of a Hong Kong newspaper. But the Aussie-born Citizen Murdoch can tell his competitors to "eat my shorts," thanks to an animated family named the Simpsons, who squabble incessantly on the Murdoch-owned Fox TV network. Murdoch is married to novelist Anna and has four children.
HARRY OPPENHEIMER, 81 **and family**	Johannesburg SOUTH AFRICA	N	**$1.3**	**8.3% of Anglo American Corp., gold mining; De Beers Consolidated Diamond Mines; 7% of Minorco, international trading; cash; real estate.** Anglo-American companies now control some 54% of the Johannesburg stock exchange listings, which represents one-fourth of South Africa's wealth. Harry O, as he is known, is retired, living in Johannesburg among first editions of Byron and Keats and paintings by Redon and Picasso. Oppenheimer has long been a critic of apartheid, and his foundations have spent millions on education for black South Africans.

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WERNER OTTO, 80 **MICHAEL OTTO,** 48	Hamburg WEST GERMANY N	**$1.3**	**100% of Otto Versand, Germany's largest mail-order company, includes the Chicago-based Spiegel mail-order house.** For many years, Germans associated success in the mail-order world with billionaire Grete Schickedanz and her outfit, Quelle. Now Otto Versand's constellation of catalogues is Deutschland's shop-at-home tool. In 1949 Werner transformed a bankrupt shoe store into a home-delivery shoe, coat, and woolens operation. Michael runs the day-to-day affairs with an eye toward environmentalism—no more fur coats in the catalogues.
WILLIAM BERNARD ZIFF, 60 **and family**	Manalapan FLORIDA	**$1.3**	**100% of Ziff Communications, computer magazines; real estate; cash.** Learning that he had cancer and fearing the worst, Ziff sold off most of his consumer and trade magazines to Rupert Murdoch's News Corp. and CBS in the mid-1980s. Now recovered and left with mostly computer magazines, Ziff is into growth, buying *Personal Computing*'s subscriber list to bulk up the circulation of his *PC/Computing*. The eidetic publisher also created a new magazine, *PC Sources*, a guide to braving the rough waters of mail-order computer shopping. The first issue is expected in October.
KARL ALBRECHT, 70 **THEO ALBRECHT,** 68	Mulheim an der Ruhr WEST GERMANY	**$1.2**	**100% of ALDI: 3,500 discount supermarkets throughout Europe.** After the Berlin Wall crumbled, it didn't take the enterprising owners of ALDI—for Albrecht Discount—long to cut a deal with East Germany's Handels Organisationen for a joint grocery venture in the G.D.R. The first ALDI has already opened in Dresden. Harsh working conditions, for which the Albrechts are infamous, have drawn criticism from several Dresden newspapers. Other ALDI earmarks: no-name brands and austere environs. Ah, capitalism!
LUCIANO BENETTON, 55 **GIULIANA BENETTON,** 53 **GILBERTO BENETTON,** 49 **CARLO BENETTON,** 46	Treviso ITALY	**$1.2**	**81.3% of Benetton SpA; Edzione: banking and financial services; 15% of Tio Pepe distillers; 100% of Nordica ski boot manufacturers.** If Luciano has his way, the United Colors of Benetton will soon fly in such commercial nether regions as China. But the family has a few tangled skeins to deal with first: declining profits, lawsuits by angry U.S. licensees, and an ill-advised move into financial services. Meanwhile, the family is weaving a plan to clothe the Soviet Union: The first Benetton outlet opened in Moscow last April.
ARTEMUS DARIUS DAVIS, 84 **JAMES E. DAVIS,** 83 **M. AUSTIN DAVIS,** 79 **and family**	Jacksonville FLORIDA N	**$1.2**	**37% of Winn-Dixie Stores; 52.3% of American Heritage Life Investment Corp.** The Davis brothers took an outfit called Table Supply Stores public in 1933 and kept reinvesting profits in the business. Not letting that cash pile up on the shelf was wise. Today more than 1,200 Winn-Dixie supermarkets—the name was changed in the late 1950s—in the South and Southwest ring up some $9 billion in sales each year. James's son A. Dano Davis, 45, is chairman of the board and he has held nearly every retail position in the company from bottle boy on up since he began working part-time at 17. Artemus's kid Robert, 58, is vice chairman and a director.
MARK DIETHELM	Küsnacht SWITZERLAND	**$1.2**	**100% of Diethelm & Co.: pharmaceuticals, food, personal care products, and more.** Diethelm insists he is not among his country's wealthiest citizens, but he's whistling in the dark. The $1.8 billion Bangkok-based conglomerate, founded by Mark's grandfather in 1887, has expanded all over the globe and continues to acquire valuable real estate. Recent projects include joint ventures with Edward Keller Ltd.: Together they own a U.S.-based arts and crafts supplies manufacturer.
PRINCE HANS ADAM II, 45	Vaduz LIECHTENSTEIN N	**$1.2**	**97.7% of the Bank of Liechtenstein; vast art collection; real estate.** When Hans Adam's father, Franz Josef, became ruler in 1938, the principality was so poor, dad literally had to sell family jewels to pay the national debt. Today Liechtenstein is affluent, industrialized, relatively untaxed, and home to 1.3 corporations per inhabitant. Franz Josef died last year, leaving the scepter to his firstborn son. Hans Adam has final say over laws and the power to dissolve Parliament, so his rule isn't mere ceremony. He is more a national manager, openly voicing his opinions, than a noble arbiter.
MARTIN HILTI, 75 **MICHAEL HILTI,** 44	Schaan LIECHTENSTEIN	**$1.2**	**87% of Hilti AG and Hilti Transatlantic: industrial fasteners, construction chemicals, and electrical tools.** In May, Michael Hilti took over the company from his father, but because critics don't think he's aggressive enough, there are doubts that he's a snap off the old fastener. Hilti the elder founded the company as a spark plug manufacturer when he was 27. He believes in paying attention to his customers. And last year Hilti AG set a record with an average 40,000 client contacts per day.

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GERRISH MILLIKEN, 73 **ROGER MILLIKEN,** 74	Greenwich CONNECTICUT Spartanburg SOUTH CAROLINA		**$1.2**	**34% of Milliken & Co.; 41% of Mercantile Stores Co.; real estate.** For years the Milliken brothers kept the seams of their textile and chemical concern tightly sewn. But last fall disgruntled family members sold off a fraction of their 17% minority stake. Now CEO Roger Milliken may have to share sensitive financial information with new owners. Roger is married and has five children.
REINHARD MOHN, 69	Gutersloh WEST GERMANY		**$1.2**	**89.3% of Bertelsmann AG, the world's second-largest media conglomerate: Bantam Books, Dell, and Doubleday publishers.** Few markets are as underdeveloped in Eastern Europe as the media, and Bertelsmann plans to do something about it. Success in the former bloc could placate Chairman Mohn, whose company was relegated to No. 2 status among world media groups last year owing to the merger of Time Inc. (publisher of FORTUNE) and Warner Communications. One thing the Mohn-controlled newspapers and magazines don't write about: Herr Mohn himself. Reinhard prizes his anonymity.
MANFRED VON OPPENHEIM, 65 **ALFRED VON OPPENHEIM,** 55 **and family**	Cologne WEST GERMANY	N	**$1.2**	**100% of Sal. Oppenheim Jr. & Cie: banking, insurance, and securities; industrial concerns.** The firm thrives as an international banker. The family doesn't do badly in sport, either. Horses reared in von Oppenheim stables usually garner the lion's share of racing ribbons and prizes in Europe.
RUDOLF AUGUST OETKER, 74 **and family**	Bielefeld WEST GERMANY		**$1.2**	**100% of Oetker Gruppe: food, breweries, chemicals, insurance, and more.** With stringent death duties coming due in 1991, the family Oetker has had to act fast: This year Rudolf nominally transferred ownership of Oetker Gruppe properties to his progeny. August, the eldest of eight children from three marriages, continues to run the conglomerate with its 85 subsidiaries.
PRINCE SULTAN BIN ABDUL-AZIZ AL SAUD, 64	Riyadh SAUDI ARABIA		**$1.2**	**Saudi Arabia's oil riches.** The generous Prince Sultan is King Fahd's full brother, an important distinction in a family that reckons siblings by the scores. He is also minister of defense and aviation and presumed to be second in line to the throne after his half brother Prince Abdullah bin Abdul-Aziz. Sultan is noted for his accessibility to desert Saudis, particularly the armed forces.
SIR JOHN SWIRE, 63 **ADRIAN SWIRE,** 58	Kent ENGLAND London ENGLAND	N	**$1.2**	**85% of John Swire & Sons, which controls shipping groups, airlines, cold storage facilities, and insurance companies.** Sir John is president and Adrian chairman of the company John Swire (the first) founded in Liverpool as a general trading house in 1816. The Oxford-educated brothers now guide an empire with activities sprawling from their homeland to Papua New Guinea. Adrian is married to Lady Judith Compton. John, also married, has three children.
PHILIP FREDERICK ANSCHUTZ, 50	Denver COLORADO		**$1.1**	**100% of Anschutz Corp.: Southern Pacific Railroad and Denver & Rio Grande Western Railroad, oil, real estate, ranching, and cement.** Valuable, undeveloped land near downtown Denver and key national rail links with their associated real estate all contribute to Anschutz's standing as Colorado's richest man. His 1988 purchase of Southern Pacific was so highly leveraged that Anschutz sold off railroad land to keep the banks and bondholders at bay.
SEBASTIAO FERRAZ DE CAMARGO PENTEADO, 81	São Paulo BRAZIL		**$1.1**	**93% of Camargo Correa group, which includes Brazil's second-largest construction and engineering company.** After running the shop for half a century, company founder and patriarch Sebastiaõ Camargo stepped down last year, ceding control to longtime employee Werner Schmidt Rehder. Rehder's appointment surprised some, notably Sebastiaõ's son-in-law, Carlos Dias, whom some thought likely to take the top spot. But sources say the new Camargo president possesses in abundance that one quality Sebastiaõ finds irresistible: discretion.
JOSEPHINE FORD, 67 **WILLIAM CLAY FORD,** 65 **and family**	Detroit MICHIGAN		**$1.1**	**5% of Ford Motor; Detroit Lions pro football team.** William Clay retired 18 months ago as Ford's vice chairman, but son Bill Jr., MBA in tow, is working his way up at the country's No. 2 automaker along with cousin Edsel B. Ford II. But it's not easy being a Ford: Family members don't get free cars. They must buy them from dealers.
AHMED JUFFALI, 61	Riyadh SAUDI ARABIA		**$1.1**	**E.A. Juffali & Brothers, 12 Saudi industrial companies: automotive, construction, and more.** Raised by his older brother, Juffali was granted a concession by a British power company to supply electricity to the town of Taif in the 1940s. Today his company operates joint ventures with Daimler-Benz, Dow Chemical, and Massey-Ferguson, and is the largest private industrial and trading conglomerate in Saudi Arabia. Juffali has already begun to branch out elsewhere in the Middle East, owning a stake in a Daimler-Benz plant in Turkey.

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continued

NAME Age			WEALTH billions of U.S. dollars	SOURCES OF WEALTH Background
KIRK KERKORIAN, 74	Los Angeles CALIFORNIA		**$1.1**	**76.3% of MGM/UA Communications; 80.7% of MGM Grand, operator of hotels, casinos, theme parks, and an airline.** The son of an Armenian immigrant farmer, Kerkorian started out after World War II ferrying gamblers to Las Vegas in a converted surplus bomber. His business has been turbulent ever since. Venerable MGM/UA has been the object of a number of scuttled takeover attempts, most recently from Sicilian businessman Giancarlo Parretti's Pathé group.
LARS-ERIK LUNDBERG, 70 **FREDERIK LUNDBERG,** 39	Norrkoeping SWEDEN Zollikon SWITZERLAND		**$1.1**	**54.3% of Lundberg Group, a construction, real estate, and asset management conglomerate.** Lars-Erik started out as a small-scale building contractor in Norrkoeping in the mid-1940s. Today son Frederik is chief executive of Lundberg, controlling 11.5 million square feet of commercial real estate, 4,500 acres of vacant sites, and a portfolio of Swedish stocks said to be worth $1.2 billion. Frederik and his wife and two children have moved to Switzerland, fleeing his home country's taxes, which are the world's highest.
SALEM AHMED BIN MAHFOUZ, 83 **and family**	Mecca SAUDI ARABIA		**$1.1**	**52% of National Commercial Bank in Jiddah; 10% of First American Bankshares; securities.** Mahfouz family members have long been bankers to Saudi royalty, and National Commercial is Saudi Arabia's largest bank.
DONALD W. REYNOLDS, 83	Las Vegas NEVADA		**$1.1**	**Donrey Media Group: newspapers, cable and broadcast TV, and 10,400 outdoor billboards.** As a 12-year-old newsboy, Don Reynolds bought copies of the Oklahoma *News* for half a cent and sold them for a penny each. He is still buying and selling, now concentrating on small to midsize markets that his organization calls the "community media concept." Some eight million Americans look to Donrey each day for news and entertainment. Reynolds, thrice divorced, has three children.
JOSEF SCHÖRGHUBER, 70	Munich WEST GERMANY	N	**$1.1**	**Munich real estate; 100% of Hacker-Spaten Brewers; aircraft leasing; travel agencies; Coca-Cola franchises; and agricultural land in Brazil.** His father, a local carpenter, wanted Josef to pick up the family toolbox, but young Schörghuber had no such modest ambitions in mind. Engineering degree in hand, he proceeded to transform pastures and farmland into a highly commercial Munich neighborhood. The "sugar bread and whip" manager, as he is called, is grooming his son Stefan, 27, to take control when and if he retires.
ABDUL-AZIZ SULAIMAN, 51	Jiddah SAUDI ARABIA		**$1.1**	**Real estate in Saudi Arabia; Nissan distributorship in Saudi Arabia; Bank Al Jazira; Meridien Hotels in the U.S.; Caribbean cement plants; shipping.** The founder of modern Saudi Arabia, King Abdul-Aziz Al Saud, granted Sulaiman's father a lucrative cement franchise as well as valuable real estate holdings. Sulaiman senior later became Saudi Arabia's first minister of finance.
FEYZI AKKAYA, 83	Istanbul TURKEY	N	**$1.0**	**50% of STFA, Turkey's leading contractor.** The business that Akkaya and school chum Sezai Turkes (see below) started in 1940 has since produced 135,000 miles of highway, 25,000 miles of tunnels, 46 bridges, and scores of other additions to Turkey's infrastructure. The two are inseparable. Their partnership is based on an oral agreement, and they have never been known to quarrel. Bookish, Descartes-loving Akkaya has written 11 books on engineering and wears a pen on a string around his neck to explain graphically what he finds difficult to say in words.
PIETRO BARILLA, 77	Parma ITALY	N	**$1.0**	**51% of Barilla: pasta and baked goods.** Nineteen years ago, Pietro Barilla sold his pasta-making outfit to W.R. Grace but then became dissatisfied with Grace's stewardship and bought it back. Barilla's 200 shapes and sizes of noodle now command a third of Italy's pasta market and a fifth of the rest of Europe's. Italian movie director Federico Fellini once created a TV commercial for the company. Two of the four Barilla children work for dad, while another races autos and the fourth attends the University of Milan.
HEINRICH BAUER JR., 50 **and family**	Hamburg WEST GERMANY	N	**$1.0**	**100% of Bauer Verlag: 32 newspapers and magazines; 100% of Opthyl Optical, a maker of eyeglass frames; Weston supermarket chain in Texas.** One of a handful of billion-dollar-plus German publishing houses, Bauer Verlag is a quiet giant. A score of television guides and women's magazines including *Woman's World* create revenues of $1.2 billion a year. Though ruthless and autocratic in money matters, Heinrich Bauer has an undistinguished appearance, leading some employees to mistake him for a low-level clerk at one of the lesser publications.

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continued

NAME Age			WEALTH billions of U.S. dollars	SOURCES OF WEALTH Background
FABIO BERTARELLI, 57 **and family**	Coinsins SWITZERLAND		**$1.0**	**86% of Ares Serono: pharmaceuticals and diagnostics.** After a 30-year battle with some of Serono's original shareholders, including financier Michele Sindona and the Vatican, Bertarelli regained control of the company his father once led. Founded in 1906 in Turin, the company specializes in fertility drugs, and it currently supplies half the world's demand. Committed to ending human infertility, Serono operates several prestigious clinics for childless couples.
NEJAT FERIT ECZACIBAŞI, 77	Istanbul TURKEY		**$1.0**	**Eczacibaşi Group: pharmaceuticals and ceramics.** Westernizing his country's pharmaceutical industry through licensing deals with Bristol-Myers, Parke Davis, Upjohn and other big drug companies brought Eczacibaşi his wealth and renown. The handsome, energetic Turk is said to live two days in one, waking up early then knocking off work to pursue art, music, and athletics. His two sons both work in the business.
PRINCESS MELINDA OTTRUBAY ESTERHAZY, 69	Zurich SWITZERLAND	N	**$1.0**	**Real estate, including 70,000 acres of Austrian woodlands; stock holdings.** With bombs exploding outside their Budapest shelter during World War II, Melinda Ottrubay met the Austrian Prince Paul Esterhazy von Galantha, fell in love, and eventually became his wife. The Prince died in exile in Switzerland last year and left his vast riches to Melinda rather than to the oldest male in direct line as was the Austrian nobility's tradition. But the couple was childless, and so the fortune will go to Paul's brother, Ladislaus, or nephew, Anton.
CHANTAL GRUNDIG, 41	Baden-Baden WEST GERMANY	N	**$1.0**	**Inheritance from the Grundig electronics fortune; luxury hotels; real estate.** Who says Jane Eyre was the only governess who made it big? Chantal Grundig was hired as a language tutor to Max Grundig's second wife, Anneliese, and managed to become Max's third wife. Now the svelte, suave French-born widow contol. two-thirds of the foundation that holds the late tycoon's billions. She is the mother of his only child: Maria, age 10.
KHALED BIN IBRAHIM **ABDUL-AZIZ BIN IBRAHIM**	Riyadh SAUDI ARABIA		**$1.0**	**Securities; real estate.** The Ibrahims are brothers of King Fahd's favorite wife, making them, it would seem, the King's favorite brothers-in-law. They made their pile representing Boeing and Rolls-Royce in Saudi deals. In addition, they handle investments for the King's adored youngest son, Prince Abdul-Aziz, 18, whom they appear to have helped turn into the world's richest teenager, worth almost a billion dollars.
MEHMET EMIN KARAMEHMET, 45	Istanbul TURKEY	N	**$1.0**	**Cukurova, Turkey's third-largest industrial conglomerate.** Although Cukurova's textile business dates back to the 19th century, the company's modernization and diversification began after the war under the tuition of the Karamehmet and Eliyesil families. Karamehmet's father obtained a Turkish dealership from Caterpillar by plying visiting execs with fine food and drink. A similar arrangement was duly worked out with John Deere. Karamehmet himself has few interests outside work and models himself after Turkish billionaire industrialists Vehbi Koc and Sakip Sabançi (see below). He is married with one child.
PRINCE KHALID BIN ABDULLAH BIN ABDUL-RAHMAN AL-SAUD, 53	Riyadh SAUDI ARABIA		**$1.0**	**Saudi business interests; international investments.** Called the "most solidly professional of the royal businessmen," Prince Khalid is a shrewd industrialist, investor, and owner of champion racehorses. He learned his way around the business world working for Suliman Olayan. Oil has been discovered in the ground beneath Khalid's 1,000-acre estate in Kent, England.
VEHBI KOÇ, 89	Istanbul TURKEY		**$1.0**	**Koç Holding: 110 companies in appliances, food, banking, insurance, construction, and tourism.** Envious of wealthy Christians riding to their orchards in fine carriages, young Koç forswore formal education and headed straight into commerce. On borrowed money and 18-hour days, he branched out from running a small shop to cutting deals with multinational corporations. A man of simple tastes who takes brief vacations at modest resorts, Koç is the archetype of the Max Weber capitalist: inner mettle to ensure material success.
WILLIAM I. KOCH, 50 **FREDERICK R. KOCH,** 56	Palm Beach FLORIDA New York NEW YORK		**$1.0**	**100% of Oxbow Corp., energy trading and production; real estate; cash; art.** Koch Industries' patriarch, Fred Koch, warned his oldest sons that the money they would receive when they turned 21 would be "either a blessing or a curse." It does not seem to have been a blessing. Fred's four sons spent the better part of the 1980s suing each other for control of Koch Industries, haggling over the price, and engaging in public name calling. Frederick, the oldest, was written out of dad's will, but his portion of the family trust allowed him to amass an impressive art collection.

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NAME Age			**WEALTH** billions of U.S. dollars	**SOURCES OF WEALTH** Background
LEE SENG WEE, 60 **and family**	SINGAPORE		**$1.0**	**30% of Oversea-Chinese Banking Corp.** Little is known about this publicity-shy clan, reputed to be Singapore's richest family. Their fortune was built during the Depression—Singapore was affected too—when the family patriarch bought thousands of acres of farmland and real estate at starvation prices. Lee Seng Wee, along with brothers Lee Seng Tee and Lee Seng Gee, is known for philanthropy as well as reticence.
ROBERT MARINHO, 85	São Paulo BRAZIL	N	**$1.0**	**100% of Globo Group: 100 companies in communications, financial services, real estate, and 51% of NEC do Brazil.** By virtue of his media interests, Marinho is considered powerful enough to influence the outcome of elections. He is accused of using his powerful newspaper, *O Globo*, and television network, Globo TV, to propel Fernando Collor de Mello to victory from relative obscurity last year in Brazil's first direct presidential election since 1960. The ever-colorful Brazilianaire has shed his longtime second wife, Ruth, for an old flame and former French beauty queen, Lily Carvalho.
THOMAS MONAGHAN, 52	Ann Arbor MICHIGAN	N	**$1.0**	**97% of Domino's Pizza Inc.; Detroit Tigers baseball team; real estate.** Many billionaires are modest, even secretive, about displays of wealth. Then there's Tom Monaghan, who is busy creating Domino Farms, his 2,300-acre corporate HQ, complete with hot tubs, radio stations, a museum, and a small farm. He also owns the world's most expensive car, a 1931 Bugatti Royale, said to be worth several million dollars, and a substantial amount of Frank Lloyd Wright paraphernalia. He met his wife, Marjorie, delivering a pizza to her college dorm. The couple has four children.
WERNER K. REY, 46	Geneva SWITZERLAND	N	**$1.0**	**92% of Omni Holding AG; 51% of Harpener, mining and real estate; 30% of Gebrueder Sulzer machine engineering; 25% of Adia financial services.** Once an initiator of hostile takeovers in Switzerland, Rey has played "white knight" in recent deals. The Zurich-born former bank clerk made his first waves 14 years ago when he emerged from nowhere with a 20% holding in the venerable Swiss shoemaker Bally. Now, like everybody else, he is eyeing Eastern Europe.
HANS RINGIER, 84 **and family**	Zofingen SWITZERLAND	N	**$1.0**	**100% of Ringier AG, magazines and newspapers; Ringier America Inc., printing; Times Ringier Inc.** It was Ringier who first brought the yellow press to Switzerland 30 years ago with the publication *Blick* (means "Look"), a racy news daily. Now it claims a million readers—a lot for such a small country. Sons Christoph, 49, and Michael, 41, took over in 1985, buying lithographer W.F. Hall, which as Ringier America ranks third among U.S. offset printers.
SAKIP SABANÇI, 57	Istanbul TURKEY		**$1.0**	**Sabançi Holding: banking, insurance, textiles, and rubber.** Impressed with Western corporations' use of logos, Sakip added the suffix "SA" to all Sabançi-held concerns. So widespread have his holdings become that his daughter once wondered if Turkish cities Bursa and Manisa belonged to the family as well. Two of Sabançi's three children are crippled, prompting him to found a hospital in Istanbul to treat spastic paralysis.
MAX SCHACHENMANN, 75	Paris FRANCE		**$1.0**	**100% of Pluess-Stauffer, the world's largest manufacturer of calcium carbonate.** For nearly half a century, Schachenmann has been selling $CaCO_3$ as filler for marble, and chalk, and recently as a whitening agent in paper. Though he hasn't ceded a speck of control over the company that supplies the U.S. with one-quarter of its calcium carbonate, his oldest son, Max Andre, has been identified as a likely successor. Max Sr. has another son, a daughter, and several awards for hang gliding.
VICTOR SMORGON, 78 **and family**	Melbourne AUSTRALIA	N	**$1.0**	**Smorgon Consolidated Holdings: steel, glass, plastics, and packaging materials.** The Smorgons originally set up shop as kosher butchers in Melbourne in 1926, then bought a chain of meat and poultry stores, and later fattened their business with export and packing operations. Today the family-run company, no longer in the meat business, is the second-biggest steelmaker down under and manufactures half the country's plastic soft drink bottles.
MOHAMMAD MAHDI TAJIR, 59	Dubai UNITED ARAB EMIRATES		**$1.0**	**Proceeds from Dubai's oil, trade, and industry; real estate.** Mahdi might well be the world's only civil servant to have earned a billion. In 1963 the Bahraini-born Mahdi was picked by Dubai's Sheikh Rashid to run the state's customs operations. Now in political eclipse, Mahdi spends his time visiting the European castles and villas he owns and tending to his magnificent silver collection. Mahdi and his wife, Zohra, have five children.

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NAME Age | **WEALTH** billions of U.S. dollars | **SOURCES OF WEALTH** Background

SEZAI TURKES, 82 — Istanbul, TURKEY — N — **$1.0**

50% of STFA, Turkey's leading contractor. Turkes co-founded STFA with Feyzi Akkaya, a friend from school days. More sociable and outgoing than his partner, Turkes, 6 feet 2 inches and 230 pounds, was a star athlete at college and admits to gambling as his sole excess. He describes himself as the company mother-in-law, interfering in everything.

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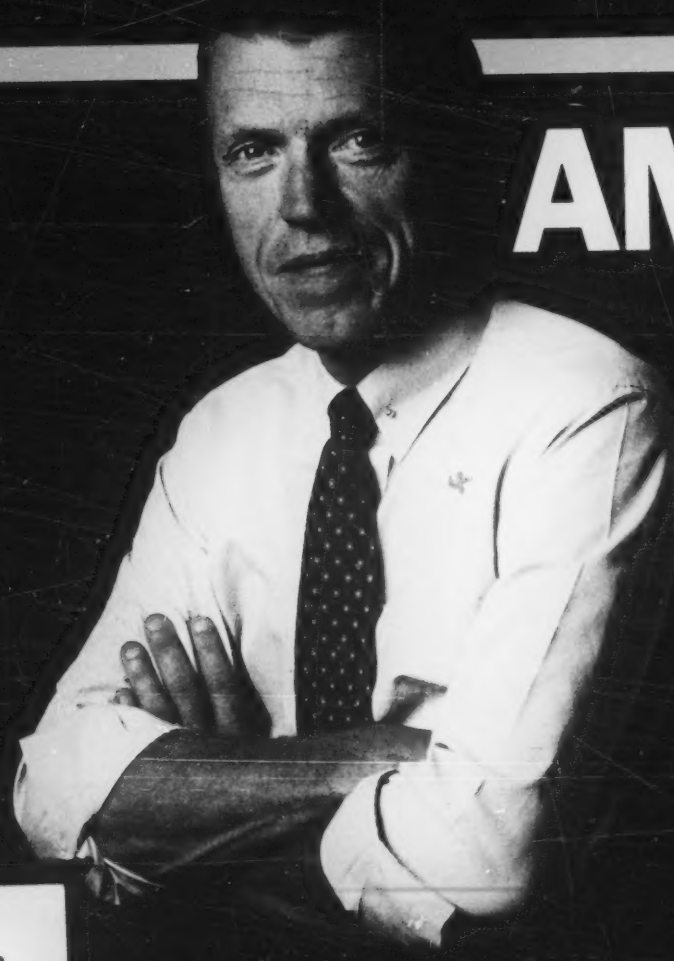

AMERICAN TAKES ON THE WORLD

How CEO Robert Crandall is turning the biggest U.S. airline into a tough global competitor

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SEPTEMBER 24, 1990 VOL. 122, NO. 7

FORTUNE

ABOVE: Will van Overbeek's camera took in this A-300 Airbus flight simulator at the American Airlines Flight Academy in Fort Worth.

COVER: American Airlines' Robert Crandall, photographed in an executive conference room at corporate headquarters in Fort Worth by Kent Barker.

"The mantle of U.S. flag carrier is passing to airlines like American. I just wonder if they are flexible enough to cope with brand-new situations." PAGE 40

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With tough guy Robert Crandall at the controls, this airline has soared to the top of the U.S. industry. Next, the workaholic CEO believes, American must accelerate its drive into the rich overseas markets. Now that the traditional U.S. flag carriers abroad are in decline, Crandall is winging into the void by acquiring a batch of promising new routes to Asia and Europe. *by Kenneth Labich*

THE COMPUTER NETWORK THAT KEEPS AMERICAN FLYING 46

TAKING OFF OVERSEAS 52

As growth stalls within the U.S., carriers from the world over are scrapping for share in global markets. *by Wilton Woods*

POLITICS & POLICY

A LOOK INTO BUSH'S BUDGET STRATEGY 57

In a rare interview, Budget Director Richard Darman—the most influential voice in the White House on economic policy—insists that his boss won't let the Persian Gulf crisis divert him from serious deficit cutting. But the President will try to trim less from defense and more from entitlement programs. *by Ann Reilly Dowd*

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"Japan will be the last country to share in a global economic recession if it happens."

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"The doctor said I should not be let out of the house—I'm just too dangerous."

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"Chances for passage are higher now for our proposals to increase business tax incentives."

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"The common thread among retailers doing it right is that they realize the customer is the one calling the shots."

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"The benefit of a wife with a significant career is that it relieves the husband of being the sole breadwinner."

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"Investment bankers and venture capitalists said, 'Golly, he's a nice guy, but what does he know about business?' "

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EDITOR'S DESK

LOUIS PSIHOYOS—MATRIX

Faltermayer sees the U.S. on a risky track.

AMERICA'S ABILITY to project military might abroad (and to enhance living standards at home) ultimately rests on industry's ability to manufacture nuts and bolts, missiles and computers, and myriad other necessities—independent of imports. Yet, as writer Ed Faltermayer shows in chilling detail starting on page 62, that ability is waning. In more than a score of key industries, U.S. manufacturers are losing market share right at home. Imports lead exports by so much that to pay the difference, the U.S. has been selling assets—including factories—at the rate of one Rockefeller Center a week.

Like a sandcastle at high tide, America's manufacturing base is sliding away. Unless changes are made in management thinking, public education, and tax policy, America risks becoming, as Faltermayer says, "a branch-office colony of European and Asian owners, stripped of top laboratories, decision-making jobs, and control over its national destiny."

Peter Petre, who edited the story, views it as an especially timely addition to FORTUNE's ongoing assessment of U.S. competitiveness. Says he: "Faltermayer, one of our wisest and most experienced writers, went at the subject with no preconceptions, and he is the first to admit that what he learned scared the pants off him." To find out where the U.S. is losing, where gaining, Faltermayer and reporter Sandra Kirsch interviewed well over 100 sources. The consensus: Though the U.S. has lost battles for important markets, it can still win the economic war. And Faltermayer tells how.

SHONNA VALESKA

Connelly: surprised so many husbands talked

On the domestic front, senior editor Julie Connelly—fresh from supervising our billionaires package in the last issue—writes about executive marriages, starting on page 129. She goes inside the mind (and heart) of management to determine how male managers are adjusting to marriages in which their spouse's career may outshine their own. Books and articles have plumbed the inner lives of women, but almost none have focused on the men they marry.

"I've wondered for years how men were feeling about dual-career marriages," says Connelly. "The media seem to listen only to extremes—either to Phil Donahue or to male chauvinists—not to the majority of men in the middle."

At first she worried that men might not want to talk about their feelings. But after she and reporter Laurie Kretchmar had conversed with more than 70 people, including wives, management professors, psychologists, personnel managers, and 35 husbands, Connelly knew better: "I was surprised how willing the men were to speak. Their attitude seemed to be: Thank goodness someone finally asked us."

Marshall Loeb

MANAGING EDITOR

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Experts say Saudi oil facilities such as this refinery in Yanbu are well shielded from Iraqi missiles and tanks.

DEFENDING SAUDI ARABIA'S OIL FIELDS

■ Since Saudi Arabia will increase its oil production to eight million barrels a day this month to make up for the lost flow from Iraq and Kuwait, the question is whether it can deliver if the bullets fly. The world's largest known petroleum reserve, the Saudis' immense Ghawar field, is only 250 miles south of the Iraqi front lines. Can it take a thumping and keep on pumping?

Probably yes, military and oil industry experts were saying in early September. The danger that an attack by Saddam Hussein could shut it down seems relatively small. Simply dropping bombs on a sprawling web of pipelines would not do serious damage, because the steel tubing is easy to replace.

To cripple Saudi production, the Iraqis would have to launch a precision strike on sensitive control centers at vital choke points. One of them is Abqaiq, where hydrogen sulfide gas has to be drawn off the crude oil before it can be pumped into the tankers waiting in the Persian Gulf. Replacing the control centers would be difficult. Says Henry Schuler of the Center for Strategic and International Studies in Washington: "Saudi facilities are so big they are one of a kind. You don't replace them off the sheif."

But Iraq probably lacks the ability to pinpoint those targets. American F-15s and F-16s would presumably be able to stop intruding Iraqi fighter planes before they got close enough to hit control centers with their Soviet- and French-made air-to-surface missiles.

A successful attack by Iraqi tanks appears equally unlikely. They would have to operate while under fire from ground forces that grow stronger daily and already formidable U.S. and Saudi jet fighters. Nor are terrorists likely to penetrate those well-guarded positions.

Iraq's most threatening long-distance weapon is the Scud missile, which can carry a 2,000-pound warhead for 400 miles or so. But the Soviet-made projectiles are so slow that U.S. Patriot missiles and planes have a shot at picking them off. Even if they get through the defenses, they are notoriously inaccurate. Says Anthony Cordesman, national security assistant to Senator John McCain (R-Arizona): "They can hit the right city, but that's about it." Luckily, Baghdad doesn't have the newer Soviet missiles or, worse, speedy U.S. Tomahawk cruise missiles, which have a 1,500-mile range and lock in their targets with great accuracy. **– Lee Smith**

WHERE ARE THE RISK ANALYSIS EXPERTS?

■ Ten years ago when upheaval in Iran captured world attention, many U.S. companies hired in-house experts—former government officials or academics—to guide them through the treacherous waters of overseas operations. Today you might think the risk-analysis teams would be working overtime. But except for those in major financial institutions and oil companies, most departments have been dissolved.

Many lost out to corporate cost cutting because they never generated profits and could show few concrete results. They were never sufficiently plugged in to the decision-making process to affect company policy. Says Stephen Blank, co-founder of the risk consulting company **Multinational Strategies**: "Instead of selling a service inside the company, they drifted in an academic direction."

Companies hire risk consultants now mostly for specific projects or incorporate them into planning departments. Notes Barbara Samuels, president of the Council for International Business Risk Management and a strategist at **Chase Manhattan Bank**: "If the guys running the overseas business know what they're doing and get analytical help, you may not need a special team." So if international managers are well versed in foreign cultures, keep close ties to headquarters, and have autonomy to act, a 1980s-style risk department may be redundant. **– Sally Solo**

CAREER TIPS FOR THE CLASS OF '94

■ As college freshmen agonize over whether to sign up for Renaissance Painting or 21st-Century Computers, they may take comfort in the fact that they've already made an important career choice just by enrolling. Jobs requiring an undergraduate education are on the rise, while the growth in students going for a degree is sluggish. (For a look at how the slowdown is hurting college finances,

JOBS FOR FUTURE COLLEGE GRADS

Occupations that will have the highest growth rates when the class of 1994 graduates

OCCUPATION	1994-98 GROWTH RATE		NUMBER OF JOBS
Medical assistant Excludes doctors and nurses	4.8%	1994	781,900
		1998	941,600
Lawyer/legal assistant	4.7%	1994	1,001,400
		1998	1,215,400
Systems analyst/ computer programmer	4.4%	1994	473,300
		1998	562,300
Electrical and electronics engineer	3.6%	1994	525,600
		1998	606,000
Teacher Primary and secondary school	2.2%	1994	1,193,600
		1998	1,303,200

SOURCE: AJS CONSULTANTS

WHAT LONGTIME CEOs MAKE VS. THE AVERAGE WORKER

WILL VAN OVERBEEK

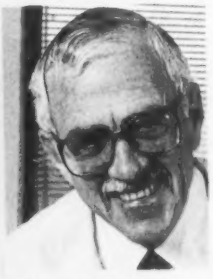
Darwin Smith
Kimberly-Clark
Compensation*
$1,289,333
Ratio to worker's pay
59:1

LOUIS PSIHOYOS—MATRIX

Thomas Murphy
Capital Cities/ABC
Compensation*
$1,830,000
Ratio to worker's pay
84:1

ANDY FREEBERG

J. Peter Grace
W.R. Grace
Compensation*
$4,345,000
Ratio to worker's pay
200:1


ALAN D. LEVENSON

Richard Eamer
Nat'l Med. Enterprises
Compensation*
$13,585,000
Ratio to worker's pay
625:1

*Annual average from 1987 to 1989.

see Education, page 103.)

Four years from now, these members of the class of 1994 may find the job search easier than it is today. Says Jon Sargent, an economist with the Bureau of Labor Statistics: "The oversupply of college graduates is closer to being eliminated than at any time since the 1970s." The BLS reckons that labor markets in the 1990s will be only "somewhat competitive," with an average of 1.95 million graduates annually seeking 1.8 million jobs that demand a college degree.

According to **AUS Consultants** of Philadelphia, which forecasts industry and job growth by analyzing economic and demographic trends, the eating and drinking industry will spawn the most new jobs (929,000) in the mid- to late-1990s. After that will be social services (596,000 jobs), nursing (479,000), and hospitals (418,000).

Among the professions, engineering and architecture are growing quickly. Between 1994 and 1998, another 248,000 jobs will be created in those fields. And yes, studying the law will still pay: Some 214,000 new positions for lawyers and paralegals will be opening up in the same period. **–S.S.**

LET THEM EAT BREAD

■ "You could call this the Marie Antoinette school of management," says leading compensation expert Graef S. Crystal. The Berkeley professor has discovered a growing gap between the pay of CEOs with long tenure and hourly workers. Crystal calculates that veteran chiefs typically earn 130 times the average U.S. factory worker's annual pay of $21,735, vs. 34 times as much 14 years ago.

Hefty increases in long-term incentives account for much of the increase. They include stock options and restricted stock, shares the CEO receives free but may not sell during a specified period. In the past three years these incentives have accounted for 57% of the total pay package of the veteran CEOs studied. The median package averaged $2.8 million annually. Fourteen years ago noncash compensation was only 13%.

For consistency, Crystal restricted his study to CEOs who had held their jobs for at least 17 years. Darwin Smith at **Kimberly-Clark**, who earns 59 times a factory worker's wage, ranked lowest among the nine CEOs studied. At the top was Richard Eamer of **National Medical Enterprises**, a hospital management firm, whose package was worth an average of $13,585,000 a year between 1987 and 1989.

In ancient times Plato suggested that the highest-paid person in a community should not make more than five times the lowest-paid one. But then, few CEOs in Plato's time got megastock grants. **–Kate Ballen**

DETROIT'S QUICK FIX: SELL TO FLEETS

■ With consumers hesitant to spend an average of $16,000 on a new car, U.S. automakers are depending more on fleet buyers such as rental car agencies, police departments, and corporations. In the first half of 1990, **General Motors**, **Ford**, and **Chrysler** sold 29% of their three million cars to fleets, up from 27% in last year's first half.

While fleet sales can keep auto plants running in a slow year and allow potential customers to sample new products, they can be very costly. To avoid antagonizing dealers, automakers buy back most of the rental cars. Then they resell them to dealers at a sharp discount, even if the cars are only a few months old. Auto analyst Maryann Keller of Furman Selz estimates that rental fleet sales cut Detroit's profit by an average of $1,800 per car.

Automakers insist that fleet sales are beneficial. Says Joel Pitcoff, manager of research and analysis for Ford: "In some cases we make more from fleet sales than dealer sales." Because of its ample interior and giant trunk, Lincoln's Town Car is especially popular; almost half of all Lincolns are sold to fleets (see table).

Honda, which sells only 8% of its cars to fleets, is a notable holdout against mass-merchan-

Lincoln Town Cars fill a Budget rental car lot in Chicago.

ROBERT KUSEL—SIPA

SELLING CARS BY THE GROSS

Fleet purchases* as a percentage of new car registrations

Brand	First six months of 1990	1989
LINCOLN	47	42
MITSUBISHI	34	15
GEO	33	18
DODGE	32	32
CADILLAC	31	26
CHEVROLET	31	31
PONTIAC	31	26
CHRYSLER	29	26
FORD	29	29
MERCURY	25	24
OLDSMOBILE	25	23

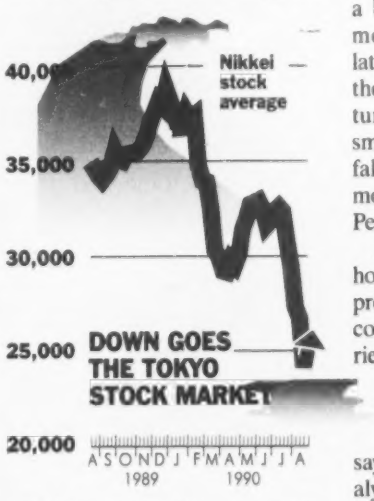
*Includes commercial fleets, government fleets, car rental agencies, and long-term leasing agencies.

For the Japanese in New York, home-style insurance forms and nurses.

dising. And **Sterling Motor Cars**, a U.S. subsidiary of Britain's **Rover Group**, lost so much money on rental cars in 1988 that it left the fleet market after one year. **– Mark Alpert**

JAPAN STAYS CALM—FOR THE TIME BEING

■ You wouldn't know it from the Tokyo stock market, but most Japanese are taking the Middle East crisis in stride. Yes, they expect oil prices to reach as high as $30 per barrel, pushing inflation up to 3.5% next year, vs. 2.7% now. And forecasts for economic growth in 1991 have been trimmed from 4.5% to 3.5%. But as Japan enters its fourth year of robust expansion, managers are not ready to give up on prosperity. To show their confidence, they expect to pump as much as 6% more into capital projects next year.



Why the optimism? Thanks to conservation, significantly more efficient industries, and nuclear power, Japan gets only 56% of its energy from imported oil today, compared with 76% in the early 1970s. The restructured economy is more resilient. Though exports will suffer as higher oil prices slow the U.S. and European economies, domestic consumption is expected to remain healthy.

While industrialists are calm, financiers are frightened. Banks may see profits drop 20% to 30% this year. The five-year balloon in asset inflation—including real estate—is deflating.

For Tokyo's stock market Gatsbys, the party is finally over. When the market staged a brief recovery in early summer after a sharp drop in late March, optimists thought the good old days had returned. Their hopes have been smashed by the market's 20% fall from its July high. (For more on the Tokyo market, see Personal Investing.)

Analysts expect brokerage houses to see a 60% falloff in profits this year. Weaker firms could be swallowed up in a series of mergers. "The Mideast crisis has brought into dramatic relief something that was already happening," says Simon Smithson, a top analyst at Kleinwort Benson in Tokyo. "The adjustment is proceeding at a hell of a speed, but it may be better to get it over with quickly." **– Susan Moffat**

ROCK OF AGES

■ The tiny Pacific island of Okinotorishima at the extreme southern end of the Japanese archipelago gives new meaning to the term "flyspeck." At high tide it consists of two coral rocks 10 and 16 feet wide.

Little Okinotorishima looms large to Japan. It stakes a territorial claim amounting to 154,440 square miles where Japan has exclusive fishing rights. Without it, the archipelago's southern extreme would be Iwo Jima or Oki Daitoshima, each about 375 miles closer to the main islands.

Three years ago the government decided to do something about the typhoon-battered island, which was eroding into nothingness. To save their molehill, the Japanese enclosed it in a mountain: a concrete ring with a seawall built of 9,900 steel blocks. None of the man-made materials could touch the natural formation because that would have made it an "artificial island" and unacceptable as a national boundary. After losing the island in 1945 and regaining it in 1968, the Japanese have now spent $200 million to save it—many times the annual revenues of the Japanese fishermen who ply the surrounding waters. **– S.S.**

Steel blocks and a concrete ring protect a tiny Pacific island from erosion.

MEDICINE WITH A JAPANESE ACCENT

■ In the beginning, there were sushi bars and interpreters at Tiffany's. Now more amenities are making New York City a nicer place for the Japanese: the 40,000 expatriates who live there, as well as the 250,000 tourists who visit annually. Among the latest is a medical practice for Japanese patients with two doctors and a bilingual staff at Manhattan's Beth Israel Medical Center.

Tokio Marine & Fire Insurance, one of Japan's biggest insurance companies, contributed $1 million plus technical support to Beth Israel for its efforts to serve the Japanese community. The giant insurer also co-sponsored a similar practice with a private physician in Los Angeles and plans to open another clinic in London in 1991.

In addition to employing Japanese staff, the medical group has tailored its procedures for its foreign clientele. Annual physicals include tests for stomach cancer, which is more prevalent among the Japanese. Results are prepared in both Japanese and English.

Even the paperwork has been designed with Japanese customs in mind. Says Robert G. Newman, Beth Israel's president: "There's something tremendously comforting and convenient in knowing you get the same darn forms." By year's end the New York City facility expects to see about 25 patients a day. **– S.S.**

TAKING OFF OVERSEAS

With growth stalled within the U.S., carriers from the world over are scrapping for share in global markets. ■ *by Wilton Woods*

THE FAST ACTION in the airline industry is happening mostly outside the U.S. While domestic travel barely budged, international departures lofted 11% last year, signaling a new era of global expansion not only for American Airlines but also for other aggressive carriers. The adjoining table ranks the world's 50 largest passenger airline companies by total 1989 revenues, measured in dollars.

In the booming Pacific, the number of passengers increased nearly 14%. Japan Airlines rode that tail wind to third place on this list, up from fourth last year. Hanjin Group, owner of Korean Air, also advanced one place, to 14th, but still seems hungry: In June it signed to buy 23 Boeing 747s, at $4.8 billion one of the largest aircraft orders ever. The U.S. carriers serving this region are fighting to maintain their share of the transpacific trade. United took the lead in that market this summer by doubling its capacity in the Pacific. Meanwhile, passengers flying from one busy Asian city to another may wait days for seats.

East meets West in an ever-shrinking world.

Within the U.S., six giants control more than 75% of the market. Looking for room to grow, all of these megacarriers—American, United, Delta, Continental, Northwest, and USAir—are mussing into Europe and Asia, adding new routes from their domestic hubs. Pan Am and TWA, once America's only international carriers, are slipping.

The old order is also changing in Europe, where the number of passengers rose 7% last year. The 12-country European Community has a flight plan for reduced regulation and increased competition by the end of 1992. Airlines there are buying smaller rivals where they can and forming alliances where they can't. Air France is building a fortress hub in Paris by taking over UTA, France's No. 2 international line, and Air Inter, the dominant domestic French carrier. Next door Lufthansa is buying 26% of East Germany's Interflug and will build a new hub in Berlin. Among the many carriers forming alliances is Swissair, which has swapped equity with Delta and Singapore Airlines.

Almost all of South America's government-owned airlines are up for sale, and passengers are praying for improved service. Local investors bought LAN Chile last year, and SAS subsequently picked up one-third of the stock. Spain's Iberia plans to buy as much as 30% of Aerolineas Argentinas in a pending deal. Sometime soon—*manana*, as they say—Venezuela's Viasa and Uruguay's Pluna will go on the block. The only line likely to keep its present structure is Brazil's 87% employee-owned Varig, Latin America's top carrier.

Next to privatize will probably be the airlines of Eastern Europe, starting with Interflug and Hungary's Malev. Perhaps one day even the U.S.S.R.'s gargantuan Aeroflot, which carries more passengers than any other airline, will follow. (This list doesn't include figures for Aeroflot or China's CAAC because their currencies aren't convertible into dollars.)

Unless Mideast tensions keep fuel prices sky-high, the surge in international flights should last for years. So many carriers have lined up to order Boeing's new 747-400s, which are designed for long-distance flights, that the company is writing orders for delivery in the year 2000. F

REPORTER ASSOCIATE *Michael Rockoff*

THE TOP 50 AIRLINE COMPANIES

Rank by revenues 1989	'88		Country
1	2	AMR	U.S.
2	1	UAL	U.S.
3	4	Japan[1]	Japan
4	5	Delta	U.S.
5	7	British Airways[1]	Britain
6	6	Lufthansa	West Germany
7	3	Continental Holdings	U.S.
8	10	NWA	U.S.
9	9	USAir Group	U.S.
10	8	Air France	France
11	11	All Nippon Airways[1]	Japan
12	12	Scandinavian Airlines System	†
13	13	Trans World	U.S.
14	15	Hanjin Group	South Korea
15	14	Pan Am	U.S.
16	16	Alitalia	Italy
17	17	Swissair	Switzerland
18	20	Air Canada	Canada
19	18	Iberia	Spain
20	19	KLM Royal Dutch[1]	Netherlands
21	21	Qantas[2]	Australia
22	22	Singapore[1]	Singapore
23	24	PWA	Canada
24	23	Cathay Pacific	Hong Kong
25	25	Saudia	Saudi Arabia
26	26	Varig	Brazil
27	28	Ansett Transport[2]	Australia
28	27	Thai Airways[3]	Thailand
29	29	Japan Air System[1]	Japan
30	30	Air Inter	France
31	34	China	Taiwan
32	31	Garuda	Indonesia
33	33	Hudson Place Investments[4]	Britain
34	36	Finnair[1]	Finland
35	32	Sabena	Belgium
36	37	Air New Zealand[1]	New Zealand
37	38	LTU	West Germany
38	35	UTA	France
39	39	Southwest	U.S.
40	43	Australian[2]	Australia
41	45	America West	U.S.
42	40	Alaska Air Group	U.S.
43	49	South African Airways[1]	South Africa
44	44	Aer Lingus[1]	Ireland
45	•	Austrian	Austria
46	42	Olympic Airways	Greece
47	47	Mexicana	Mexico
48	48	Air India[1]	India
49	•	El Al	Israel
50	•	Malaysian[1]	Malaysia

• Newcomer. † Half owned by governments of Sweden, Denmark, and Norway.

1989 REVENUES		PROFITS		TRAFFIC		COMMENTS
$ millions	% chg. from 1988	$ millions	Rank	Passenger miles in billions	Rank	
$10,589.5	20.0%	$454.8	3	73.5	1	American's parent. Its new service to 15 Latin American countries is a hit.
9,914.5	10.0	324.2	6	69.6	2	Endless buyout bids distracted management as United dropped to second place.
8,509.0	17.4	157.3	10	33.7	8	Went public in 1987. Owns stakes in Hawaiian Airlines and Air New Zealand.
8,089.5	17.0	460.9	2	55.9	3	Forged an alliance with blue-chip carriers Swissair and Singapore Airlines.
7,529.1	12.5	309.5	7	35.9	6	Kicked off the privatization movement in 1987. No. 1 in international flights.
6,941.2	3.0	56.8	22	22.5	12	Government owns 51%. Bought into East Germany's Interflug. Berlin bound.
6,768.7	(21.0)	(885.6)	47	50.4	4	Changed name from Texas Air after losing control of Eastern. Still mired in debt.
6,553.8	16.0	355.2	5	45.7	5	Owns Northwest. Taken private last year by an investor group including KLM.
6,257.3	9.6	(63.2)	41	33.7	9	Recovering from indigestion after swallowing Piedmont. Flies mostly short routes.
6,216.9	4.4	132.0	12	22.9	11	Government owned, and in no hurry to change. Buying France's UTA and Air Inter.
4,858.4	9.7	60.2	19	16.1	16	Onetime domestic carrier rapidly expanding service to the U.S. and Europe.
4,567.3	3.5	N.A.	—	9.5	26	Partners with Continental, All Nippon, Swissair, Thai, Finnair, and others.
4,507.3	3.4	(298.5)	45	35.0	7	Carl Icahn's aging, thirsty planes helped burn up his profits when fuel prices rose.
4,243.6	13.7	69.6	18	11.1	23	Owns Korean Air, plus ocean freighters and a large trucking company.
3,794.4	(8.9)	(336.6)	46	28.9	10	This debt-ridden dinosaur needs a merger—or a miracle. Biggest airline debtor.
3,734.2	14.6	(168.1)	44	12.9	21	Formed alliance with USAir and Spain's Iberia. Italian government owns 81.2%.
3,174.5	1.7	103.3	16	9.8	25	Straddling the world with powerful allies Delta and Singapore Airlines.
3,104.3	11.8	125.8	13	16.3	15	Sold to investors last year. Adding flights to Florida and Europe.
3,015.5	4.9	52.5	25	13.1	20	Already Alitalia's partner, Iberia is buying a stake in Aerolineas Argentinas.
2,938.9	4.1	184.2	8	14.9	17	Owns a chunk of Northwest's stock and plans to buy part of Belgium's Sabena.
2,665.1	18.1	144.3	11	16.5	14	Short of capital for new planes, Australia's carrier may have to go public.
2,295.8	15.2	494.7	1	17.9	13	SIA is the most profitable airline company in the world. Privatized in 1985.
2,252.9	27.7	(47.3)	40	14.7	18	Owns Canadian Airlines. Absorbed Wardair, which was Canada's third largest.
2,212.6	14.4	425.2	4	13.7	19	Remained highly profitable despite declining traffic to turbulent China.
1,910.1	12.5	(140.0)	43	10.1	24	Its policy is to provide air travel for pilgrims to Mecca, even at a loss.
1,862.1	21.6	10.4	39	8.6	28	Employees own 87% of the stock and provide the best service in Latin America.
1,743.9	32.7	108.0	15	4.8*	42	Half owned by Rupert Murdoch's News Corp. Ansett also has trucking lines.
1,683.8	17.9	182.1	9	11.6	22	Based in a red-hot region, this carrier has expanded at a sensational rate.
1,418.3	12.7	12.2	36	4.5	43	The third-largest airline in the world's fastest-growing air travel market.
1,356.5	9.5	18.3	32	5.3	39	France's domestic airline. Air France took control earlier this year.
1,246.4	20.3	115.6	14	6.5	33	State-controlled carrier. Faces competition from EVA, a privately owned startup.
1,232.6	11.6	N.A.	—	8.0	29	Indonesians haven't decided whether to privatize this government-owned carrier.
1,211.6	11.6	11.7	37	4.3	45	Owns Air Europe and Air Europa. Runs package tours. Adding scheduled service.
1,160.9	13.5	18.3	33	5.7	35	Its polar routes cut up to two hours off flights between the U.S. and the U.S.S.R.
1,146.6	4.9	18.0	34	4.2	46	Selling stakes to British Airways and KLM to boost Brussels as a hub.
1,108.7	9.0	46.6	26	6.6	31	Newly public. Sold stakes to AMR (7.5%), Japan Air (7.5%), and Qantas (19.9%).
1,094.4	13.6	N.A.	—	6.1	34	Privately owned package tour operator, expanding into scheduled service.
1,058.1	3.2	38.1	28	3.5	48	Was France's second-largest carrier until Air France took over in January.
1,031.7	22.6	71.6	17	9.3	27	A Dallas-based beneficiary of deregulation, flourishing beyond Texas's borders.
1,013.8	27.9	57.4	21	3.8	47	Government-owned domestic carrier, preparing to sell shares to the public.
1,004.2	29.5	20.0	31	7.9	30	Most successful of the post-deregulation startups. Australia's Ansett owns 20%.
929.2	14.1	42.9	27	4.4	44	Still working the same regional niche, flying up and down the West Coast.
912.2	(9.3)	55.9	24	5.6	37	Government-owned line is hurt by congressional ban on U.S. landings.
899.5	14.5	56.2	23	2.1	49	Flourishing in free-market competition on routes between Ireland and Britain.
850.5	9.7	11.6	38	1.5	50	Going public in gradual stages. All Nippon and Swissair have taken stakes.
785.0*	(2.2)*	(123.1)*	42	5.0*	40	Still government owned and notably inefficient. Not ready for 1992.
764.3	2.0	13.7	35	6.5	32	Privatized in 1988. Owners include Sir James Goldsmith. Buying 38 new planes.
745.4	1.2	28.1	29	5.6	36	New management at this government-owned carrier brought new profitability.
713.6	7.3	24.2	30	4.8	41	State owned. May sell a 49% stake to raise equity financing for new planes.
712.8	14.0	59.0	20	5.6	38	Government owns 60%. The Sultan of Brunei has a 10% stake.

* Estimate. N.A. Not Available. All figures converted to dollar using the average official exchange rate during each company's fiscal year.
[1]Figures are for fiscal year ended March 31, 1989. [2]Fiscal year ended June 30, 1989. [3]Fiscal year ended September 30, 1989. [4]Fiscal year ended October 31, 1989.

IS 'MADE IN U.S.A.' FADING AWAY?

America is losing markets and selling off pieces of its economy to pay for its big import binge. The nation just needs to make more things that people want to buy. ■ *by Edmund Faltermayer*

FEW AMERICANS worried when Asian imports took over transistor radios and calculators in the 1970s. The auto invasion that followed was different, for it struck at a symbol of national industrial prowess. Downright scary are foreign inroads into the high-technology sector, which once rang up big trade surpluses and helped offset deficits in the low-end stuff.

Is the U.S. manufacturing base melting away like sand castles at high tide? The charts on page 66 give a panoramic view of American industries in retreat on their home turf between 1979 and 1989. Those on technology's frontier took some of the worst beatings. A decade ago 94% of the computers bought in the U.S. were made in the U.S.; last year the figure was 66%. That doesn't even take account of a hollowing-out trend. An "American" computer workstation may be full of Asian parts. Other gadgets completed in the U.S. often embody assembly work by $6-a-day *maquiladora* employees just inside Mexico. And with 300,000 American flags imported from Taiwan and elsewhere in the first four months of 1990, you may wonder if *anything* will be made here in the future.

Japan, which last year outspent the U.S. for the first time on plant and equipment, could become the world's top industrial power by the year 2000 or soon after. Its manufacturing output, already more than two-thirds as big as America's, is growing faster. Meanwhile the U.S. is selling off assets to help pay for an excess of imports over exports, a red-ink figure recently running at the equivalent of one Rockefeller Center a week.

Some of the asset sales are foreign takeovers of manufacturing companies—reflected in the charts on page 67—which raise another question. Will the U.S. increasingly become a branch-office colony of European and Asian owners, stripped of top laboratories, decision-making jobs, and control over its national destiny?

Not since Sputnik have so many alarms gone off. Kenneth Courtis, a Tokyo-based economist for Deutsche Bank, warns that Japan is building "tremendous momentum. For America this is the make-or-break decade." The National Advisory Committee on Semiconductors warns that the U.S. is falling behind in chipmaking technology and that U.S. semiconductor companies may have to buy 70% of the next generation of production gear from Japan. A Commerce Department study warns that America's $200-billion-a-year electronics industry—a contender for tomorrow's huge markets in high-definition television and fiber-optic communication—could be overtaken by Japan's in the early 1990s.

REPORTER ASSOCIATE *Sandra L. Kirsch*

PHOTOGRAPH BY WILL MCINTYRE

How concerned should you be? The U.S., after all, remains far out in front in such important fields as aerospace, computer software, and medical instruments. Some studies show that American companies are holding on to their slice of world manufacturing when production at their overseas plants is figured in. Besides, all those imports have been a boon to consumers, who now have dozens of car makes to choose from as well as ever smaller camcorders for capturing baby's first steps. American companies may be moving jobs abroad, but foreigners are creating new ones by investing here, all in the healthy new spirit of globalism. Anyway, can't a predominantly service economy like America's leave much of the widget making to other countries?

The answer is no. In addition to undergirding the kind of military might the U.S. deployed in the Persian Gulf, manufacturing finances most of the R&D that brings material progress. According to Congress's Office of Technology Assessment, it also supports a lot of service jobs– 6.5 million of them in the mid-1980s, mostly well paid. When this is figured in, more than a fourth of all U.S. workers depend on factories for their livelihood.

"Postindustrial" America, though it may devote less of its activity to making things, has a growing fondness for *buying* them. Other government data show that the proportion of consumers' incomes spent on manufactured items other than food and fuel climbed from 16.4% to 18% in the seven years through 1986. Since that trend is unlikely to reverse itself, manufacturing offers the best hope of eliminating the mismatch in trade.

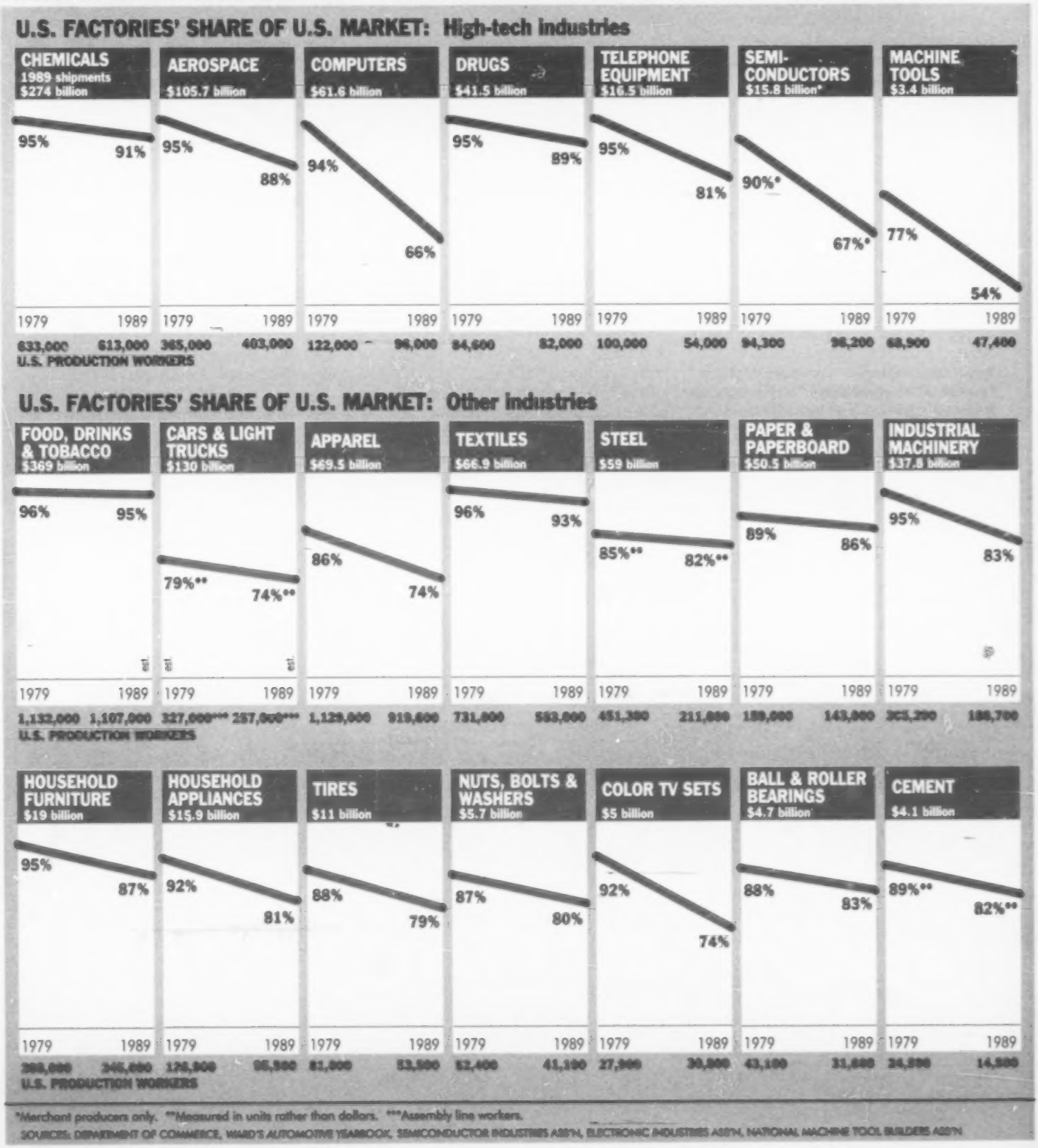
The U.S. slipped from having a trade surplus to having a huge deficit in manufactured goods during the 1980s. Booming services for foreigners—Japanese tourists visiting Disney World, Europeans watching U.S. movies—can't erase the gap. Last year the country came out only $20.5 billion ahead on all services. This was swamped by a $115 billion deficit in merchandise trade. To help settle its international accounts, the U.S. sold $72 billion worth of companies and real estate to foreign investors.

THE OVERALL current account deficit narrowed a bit in the first quarter. But a huge trade gap with Japan persists, and the annual oil import bill was running about $50 billion even before Iraq's invasion of Kuwait drove up prices. Short of heavy protectionism or a dwarf dollar, the U.S. can restore equilibrium—and stop the asset sales—only by making more *things* that people want to buy (FORTUNE cover story, May 21).

A major question mark hangs over all

Deficit fighters: The U.S. runs a trade surplus in "general industrial machinery," such as Ingersoll-Rand rock drills headed for the Soviet Union.

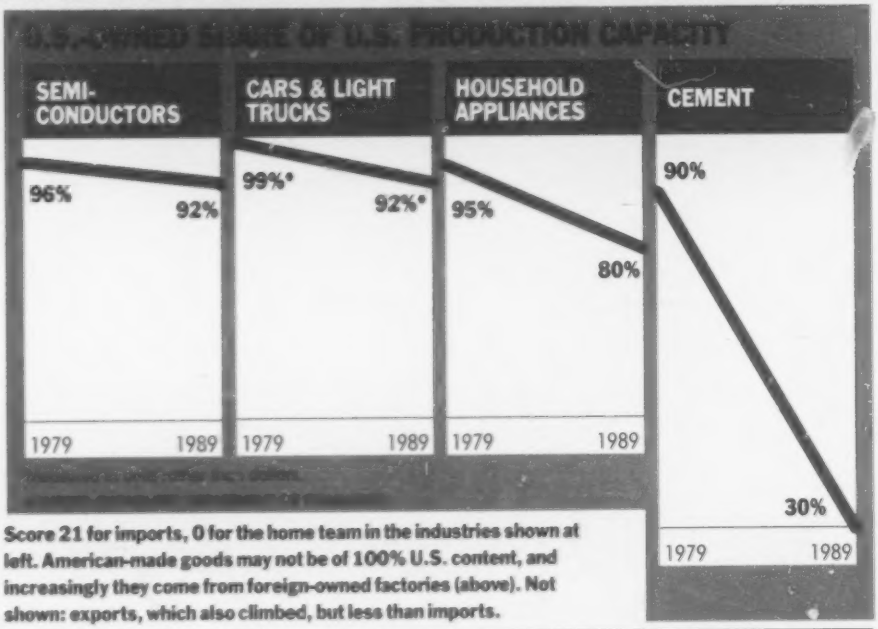
AMERICAN INDUSTRY HAS LOST GROUND TO IMPORTS...



*Merchant producers only. **Measured in units rather than dollars. ***Assembly line workers.

SOURCES: DEPARTMENT OF COMMERCE, WARD'S AUTOMOTIVE YEARBOOK, SEMICONDUCTOR INDUSTRIES ASS'N, ELECTRONIC INDUSTRIES ASS'N, NATIONAL MACHINE TOOL BUILDERS ASS'N

...AND FEWER PLANTS ARE U.S.-OWNED



Score 21 for imports, 0 for the home team in the industries shown at left. American-made goods may not be of 100% U.S. content, and increasingly they come from foreign-owned factories (above). Not shown: exports, which also climbed, but less than imports.

those foreign-owned U.S. plants. Depending on the sort of work that gets done under their roofs, they either sap or support U.S. competitiveness. Some are mere assembly operations offering only "screwdriver" jobs to Americans; the more skilled jobs and the R&D are back in Osaka or Paris. Japanese owners of American plants, in particular, have tended to keep R&D and the production of their most advanced products and key components at home. Says Robert Hayes, who teaches manufacturing at the Harvard business school: "Because of their culture, they resist moving away from the motherland."

In a recent issue of the *Harvard Business Review*, Todd Hixon and Ranch Kimball of the Boston Consulting Group describe four stages of foreign involvement in U.S. manufacturing. These range from assembly to "fully integrated business operations" embracing design as well as production. Only at the last stage, say Hixon and Kimball, do foreign investors truly enhance American competitiveness. Among the few examples they find are the U.S. consumer electronics operations of Philips of the Netherlands and Honda's burgeoning U.S. plants.

Honda, the most Americanized of the Japanese auto "transplants," has a production engineering department and builds drive trains here. By 1992, says Honda, the local content of its American cars will reach 75%. A study by Brookings Institution economist Robert Lawrence, conducted for an organization of foreign automakers and importers, says the transplants could significantly pare the trade deficit. By 1992 it could be as much as $15 billion lower than it would be if the cars made in these plants were imported. There's only one catch, as basic as Capitalism 101. Though transplants may pay U.S. taxes, hire U.S. workers, use U.S. parts, and even help swell the total of U.S. exports, the profits belong to foreign owners. For that reason they don't deliver quite as big a bang for the U.S. economy as comparable American-owned firms.

HOW DID the U.S. slip so badly in manufacturing? Guess who's easiest to use as a scapegoat. When Japanese producers dumped memory chips here in the mid-1980s, they battered their American competition. But T. J. Rodgers, 42, the feisty CEO of Cypress Semiconductor Corp., insists that America's problems are two-thirds its own fault. The title of his testimony to a congressional committee says it all: "The American Semiconductor Industry: Winners or Whiners?" U.S. companies, he maintains, are being "outmanaged" by the Japanese.

"We buy American whenever we can. But, sorry to say, the foreign proportion increases every year."

Other U.S. shortcomings are familiar: relatively high capital costs; a labor force ill-prepared by the schools; shortsighted CEOs, the reluctant generals in this war, who dodge confrontations with determined Asian adversaries because they are more interested in a quick 20% return on equity than in market share. John McConnell, CEO of Worthington Industries, says U.S. profit objectives are "not a hopeless disadvantage but a big disadvantage." For some time he has been calling the U.S. a "second-rate industrial power." At its new plant in Porter, Indiana, Worthington will install Austrian-made pickling equipment to clean steel before it is processed further. "We buy American whenever we can," says McConnell. "But, sorry to say, the foreign proportion increases every year."

Some made-in-America products are good enough to bet your life on. Ask a Japanese racing down the highway in a car equipped with an air bag from Cleveland-based TRW. The world leader in automotive restraint systems, TRW expects its sales of such products to hit $1 billion this year, up from $817 million in 1989. One ingenious move the company made several years ago to speed air-bag development: It brought top engineers from its aerospace divisions into a new department named Restraint U.

Innovative niche products aren't the only American success stories. Some industries, such as food and chemicals, are relatively intact. Even the rusty steel industry lately has taken on some sparkle, with help from voluntary restraint agreements (VRAs) that hold down imports. Among integrated U.S. producers who start with ore, man-hours per ton are now as low as Japan's. Meanwhile, the quality of American steel is up "markedly," says trade specialist William Lane of Caterpillar.

When manufacturers are faced with international competition, their knee-jerk solution is often spelled o-f-f-s-h-o-r-e. But moving production abroad to serve the home market makes sense less often than managers think. Hixon of the Boston Consulting Group notes that direct labor typically accounts for only 10% or so of a high-tech company's manufacturing costs: "From a purely wage-rate standpoint, there's

JIM HEINSTRA—PICTURE GROUP

The import blitz has spared food factories like this Sara Lee cake plant in Iowa.

no reason why you cannot make products in the U.S."

Much of the apparel industry has fled the country, but not Russell Corp. of Alexander City, Alabama. CEO Eugene Gwaltney, a long-term player if ever there was one, has invested lavishly on new equipment for making sweatsuits, sports uniforms, and other action wear. "We spent money when everybody else was laying back," says a spokeswoman. Ohio's Timken Co., which makes tapered roller bearings for cars and other machines, has no thought of walking away from U.S. production. It built a new plant in North Carolina ten years ago and is starting another in Virginia. Most of what Black & Decker sells in the U.S.—toaster ovens, food processors, Dustbusters, and power tools—is made here. Some items are exported. The company is counting on a North Carolina plant that turns out a new line of circular saws to cut it worldwide.

How battle-worthy are U.S. manufacturers for the 1990s? Here is a rundown on three essential industries:

■ **MACHINE TOOLS.** Brimming with orders a decade ago, the toolmaking business imploded in the 1980s. When backlogs were big and the dollar was strong, the Japanese and others moved in, offering fast delivery and abundant service. William Copeland of Copeland Economics, a consulting firm in Stamford, Connecticut, tells of a Japanese technician who slept on a bedroll at an American customer's plant for the first ten days after a new machine was delivered, the better to pounce if anything went wrong. Imports spurted from 23% of the market in 1979 to a peak of 49% in 1986 before slipping a couple of points.

The machine tool industry in Japan built an estimated $10 billion of equipment last year, three times the U.S. output. A good deal of what was made in America was produced by foreign-owned companies, some of which began expanding even before 1987, when the Reagan Administration imposed five-year VRAs on certain Japanese and Taiwanese machines. Mazak, the U.S. subsidiary of Japan's Yamazaki Mazak, the world's largest toolmaker, has just completed its fourth expansion since 1984 at Florence, Kentucky. Says Brian Papke, the second American to head Mazak: "This gives us the most productive machine tool operation in the U.S."

Some American companies are regaining customers. Last year Giddings & Lewis got half the U.S. orders for computer-run "flexible manufacturing cells," which carry out complex machining operations and can be changed over quickly to perform new tasks. James Geier, Cincinnati Milacron's new CEO, acknowledges that over the years his company "abdicated" much of its market share and wants to make a comeback. Teams called "wolf packs" are trying to hustle elaborate new machines into production. Milacron just sold $51.5 million in stock and intends to double its spending on product design and capital improvements over the next five years, to $250 million.

The machine tool industry in Japan built an estimated $10 billion of equipment last year, three times U.S. output.

When informed of this, Papke's boss in Japan said, "Is that all?" But don't write off the U.S. team. Eli Lustgarten, a Paine Webber security analyst who's keen on Giddings & Lewis, says American toolmakers still have a software edge. He foresees a surge in business in the 1990s as Detroit prepares to meet new fuel economy standards and to catch up in engines.

■ **COMPUTERS.** U.S. companies' share of the global computer market has slipped from 76% in 1984 to 64% in 1989, according to the Gartner Group, a market research firm in Stamford, Connecticut. But they still reign in nearly every segment of the business. In workstations they have an astonishing 65% of the Japanese market, says Dataquest, the Silicon Valley market research company. Chalk it up to superior design and the strength the computer industry draws from America's lead in microprocessor chips and software.

Those are companies. The dominance of the *country* as a computer factory is fading. One clue is a decline in U.S. production jobs, which a Commerce Department official attributes to increased outsourcing as well as greater productivity. Total U.S. electronics employment probably would fall were it not for the vibrant software industry, a portion of which statisticians count as manufacturing.

To see how international an "American-made" computer can be, consider the popular $8,995 SPARCstation 1 Plus from Sun Microsystems. Disk drives, monitors, and memory come primarily from Asia, reports vice president Kevin Melia. In order to figure out Sun's effect on the trade balance, you would have to subtract such imports from its $751 million of exports last year. Melia insists that the American content of his company's workstations—operating software, central processor unit, and some memory chips as well as R&D—is big enough to prod[illegible] a positive number.

IBM, bucking the trend, raised the American content of its personal computers when it introduced its PS/2 line. Motive: to make more money by using parts from the company's U.S. plants. Big Blue's new RISC System/6000 workstation is also heavily home-sourced. But the computer industry's manufacturing trade surplus has been sinking fast, from $4 billion in 1988 to $2 billion last year.

■ **SEMICONDUCTORS.** First the good news: The Pentagon does not yet have to beg Toshiba to sell it advanced memory chips. Japan's producers surged ahead in the mid-1980s, and as recently as 1987 held 98.6% of the world market for one-megabit dynamic random access memory chips, or DRAMs. (The statistic covers "merchant" producers and excludes companies like IBM that make chips solely for their own use.) This prompted Shintaro Ishihara, co-author of *The Japan That Can Say No*, to assert that his country could "upset the entire military balance" by selling to the Soviet Union instead of the U.S.

Japan's near-monopoly weakened after other countries ramped up one-megabit DRAM production. Dataquest reports that Micron Technology of Boise, Idaho, and other U.S. merchant chipmakers boosted their share of the global market to 12% last year. South Korea now makes the chips too.

The Americans' market share may keep rising. Lately Motorola has in effect acknowledged that keeping abreast in DRAMs may be the most efficient way to hone crucial etching and chip-production skills. Most U.S. companies abandoned DRAMs in the mid-1980s because they deemed them commodity products that would never be more than marginally profitable. Now Motorola is building a new $500 million plant in Austin, Texas, whose initial product will be four-megabit DRAMs. Micron, the only U.S. merchant DRAM-maker with no financial or technology-sharing ties to Japan, completed its third "fab," or production facility, last year.

At the summit of the semiconductor product mix, the logic chips that drive computers, the U.S. is still king.

AT THE SUMMIT of the semiconductor product mix are microprocessors, the logic chips that drive computers. Here the U.S. is still king. Intel is spending 80% of its $1 billion R&D and capital budget this year on microprocessors to maintain its No. 1 global position. Says CEO Andrew Grove: "We're outspending everybody else in the world."

Before you get too relaxed, consider this: Since the early 1980s the U.S. has run a trade deficit in chips, and Japan is now champ in many aspects of chipmaking technology. Says Michael Stark, research director at Robertson Stephens, a San Francisco investment banking firm: "The Japanese government has wisely targeted chipmaking equipment as a growth industry."

If chips are the lifeblood of the information age, equipment to make them is the jugular. Many U.S. equipment makers are struggling. Between 1983 and 1988, reports VLSI Research of San Jose, California, a market research firm, their share of the world market plunged from 69% to 50%, and it is expected to dip to 40% by 1993.

Joseph Parkinson, Micron Technology's CEO, says he hasn't yet found it necessary to buy equipment in Japan. Asked about prospects for the U.S. chipmaking equipment industry, he says tersely, "There's still a heartbeat, and it's viable." Micron is a member of Sematech, a two-year-old research consortium whose $200 million annual budget is paid for by the Defense Department and 14 chipmakers and chip users. Sematech's programs, which aim to leapfrog Japanese technology by 1993, have been running on schedule. But the equipment industry's weakness could hamper its work. Of 142 equipment and materials companies that originally signed up to work with Sematech, four have gone out of business. Another 43 have been acquired by foreign owners, mostly Japanese.

In today's interdependent, relatively peaceful world, is this something to worry about? Those who fear excessive dependence on foreign sources point to two tales of Japanese favoritism. According to one, supercomputer maker Cray Research was told by suppliers in Japan a couple of years ago that certain high-performance memory and logic chips were "not yet available for export," even though Cray's Japanese rivals were already shipping machines incorporating them. And last year Japanese companies allegedly got first crack at an advanced Nikon chipmaking device while U.S. competitors who wanted the equipment, reportedly including IBM, were kept waiting for precious months.

Cray denies the first story. IBM won't comment on the second, and Nikon insists it is untrue. But the mere fact that such tales are repeated, even in a congressional report on competitiveness, suggests a new uneasiness about carrying globalism too far. Significantly, Big Blue recently joined efforts to keep important parts of the equipment industry in U.S. hands. Together with five other companies, IBM backed a venture formed to buy a Perkin-Elmer chipmaking equipment division that might otherwise have been sold to a Japanese buyer. Such ef-

JACKSON HILL—SOUTHERN LIGHTS

Japanese-built embroidery machines help keep sportswear coming from Alabama's Russell Corp.

forts may not be enough. Peter Mills, Sematech's senior vice president, notes that in Japan and Europe, preserving and strengthening the semiconductor industry is government policy: "Japan has a strategy, Europe has a strategy, and the U.S. has a debate."

WHAT SHOULD government's industrial role be? The U.S. doesn't have to distrust its international partners to notice that they are all playing the same game: trying to get their share of leading technologies and the good jobs they bring. The Eurocrats in Brussels have launched five government-assisted megaprojects with acronyms like Esprit and Eureka to make the European Community a stronger player in semiconductors, software, and other technologies. South Korea has its target industries. Taiwan has cut taxes in half for a new chip plant. High tech is becoming as politicized as agriculture, with each country prizing white-clad workers in clean rooms just as it strives to keep farmers growing food.

A few efforts like Sematech aside, the Bush Administration has recoiled from anything with the faintest whiff of industrial policy. But if the U.S. team is playing without government help, isn't it like putting America's amateur bobsledders up against East Germany's heavily supported Olympic team in the days before the Wall came down? The best idea would be for all countries to abandon government meddling, as Bush's trade negotiators have proposed for world agriculture. Meanwhile, Washington cannot sit idle as factories close.

Deficit fighting is the first step, for it would reduce borrowing costs for American business, says C. Fred Bergsten, director of Washington's Institute for International Economics. Lawrence of the Brookings Institution doubts that America is de-industrializing. But he favors increasing the federal tax credit for R&D and has amended his views to support direct government subsidies for "precompetitive research." America is no longer "preeminent," Lawrence says, and "we can no longer take technological innovation for granted."

Government's biggest job, of course, is in the schools. Japan and West Germany have proven that a country with a superior labor force needs neither raw materials nor Lebensraum. It's a bit like the real estate man's classic rule about location. The way to keep American industry from being submerged in the rising tide of world competition is education, education, education. F

THE NEW CHAMPS OF RETAILING

In this battered business, the gap between the successful and the merely surviving is widening every day. Winners are light on debt and spending heavily on growth. ■ *by Susan Caminiti*

THE WRECKAGE in retailing has piled up so high that you need to check every week to see who's in and who's out of business. Once-proud names—B. Altman, Bonwit Teller, Garfinckel's—have closed most of their stores, victims of too much debt and too little management skill. The Federated-Allied stable, including Bloomingdale's, A&S, and Jordan Marsh, is operating in the fog of Chapter 11, unclear about the future. Industry experts and suppliers are casting nervous glances at Macy's, struggling under its own burden of debt and caught up in the profit-destroying cycle of endless price promotions. Says Jerome Chazen, CEO of Liz Claiborne, a large supplier to many of these troubled chains: "I've been in this business for 40 years and this is the most disquieting time I've ever seen."

Now look who's rising through the debris: Home Depot, the Limited, Toys "R" Us, Wal-Mart, Dillard, the Gap, J.C. Penney, and Nordstrom are becoming the new rulers of retailing. They are succeeding by developing exciting merchandising programs, finding innovative uses for technology, and expanding smartly and aggressively. Debt for these market-share masters is a measly percentage of sales (see table). That gives them the financial strength to weather the hits and misses of the industry without jeopardizing the business.

Retailing is thus becoming an industry of big winners and big losers. Says Carl Steidtmann, chief economist of Management Horizons, the Price Waterhouse division that tracks the industry: "A widening gap exists between the high performers and the rest, between those retailers who have made long-term strategic investments and those who have made short-term tactical expenditures. And that gap isn't going to shrink."

The reason is a matter of cruel economics. For strong retailers, those long-term investments trigger a beneficent cycle of moneymaking: As sales per square foot increase, operating costs as a percentage of those sales decline. That translates into lower prices for customers, which in turn boosts sales, and the cycle starts all over again. For strapped competitors, declining sales per square foot means operating costs as a percentage of sales rise, making it more difficult to keep prices competitive or to offer the amenities that keep customers happy. Trying to remedy this problem by constantly putting goods on sale may move merchandise out the doors and up the cash flow, but it eats away at the bottom line, further compounding the problem.

A typical confrontation: Nordstrom is invading Macy's turf in New Jersey with a new

ANDY FREEBERG

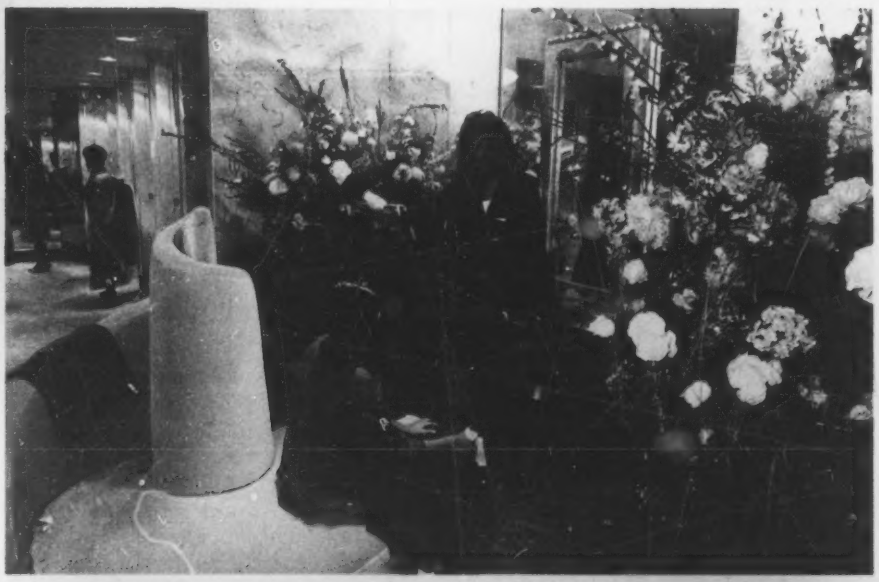
Home Depot CEO Bernard Marcus (left) and President Arthur Blank have increased sales 100-fold in ten years, to $2.8 billion. Part of their secret: simply refusing to diversify.

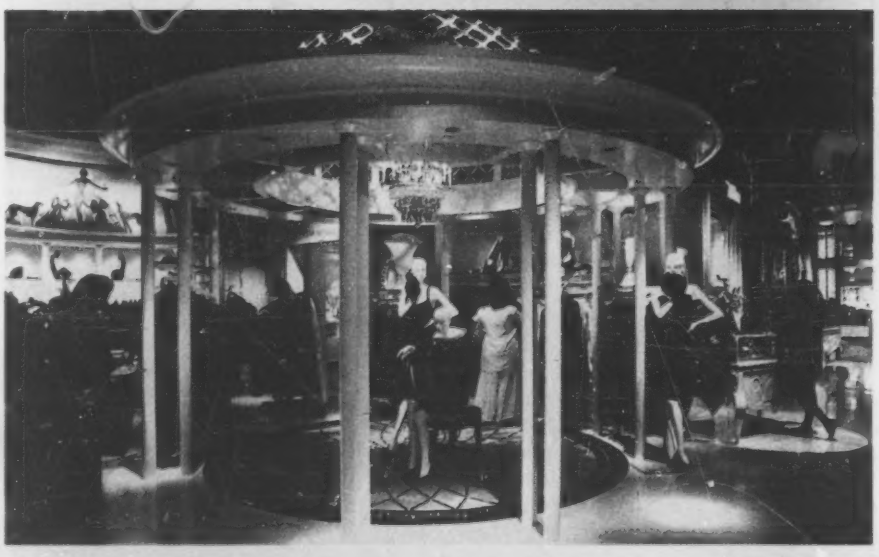
GEORGE LANGE

Under Leslie Wexner, the Limited caters to . . .

store opening this month. Bringing with it outstanding service and great selection—plus spic-and-span premises—the Seattle retailer will be competing with a Macy's that has trouble keeping some of its dressing rooms free of obscene graffiti and gum stuck to the walls. Or consider Sears, whose competitors are able to remodel old stores and map out strategies for entering new markets while it suffers by failing to slim down its bloated costs and figure out what it wants to be. Net income from the merchandise group fell 32% in the latest quarter.

THE EXECUTIVES leading today's retailing champions happen to be the ones who started the companies. They haven't forgotten the simple lesson of staying faithfully focused on their businesses. Home Depot, America's largest warehouse chain selling do-it-yourself products, has grown from four stores and sales of $22 million in 1980 to 126 stores ringing up $2.8 billion in 30 markets. Such heady expansion has been responsible for leading many a retailer into temptation, a sin Home Depot has carefully avoided. "In some cases we have 25,000 to 30,000 people walking through a store in a week, 50% of whom are women," says Bernard Marcus, the chain's co-founder and CEO. "We could sell them anything. If we wanted to put panty hose up at the front register, we'd sell a fortune in panty hose. But we don't. We don't want the customer to think we're a discounter, a food store, a toy store, or anything else, because it would confuse her. The perception of the customers always has to be, when they think of a do-it-your-





ANDY FREEBERG (3)

. . . the budget-conscious at a lush Lerner's in Manhattan (top), chic shoppers at a new Henri Bendel in Columbus, Ohio (center), and men at a new store, Structure, also in Columbus (bottom).

New Toys "R" Us distribution center gets goods into stores—and customers' carts—much faster.

self project, they think of Home Depot."

That sort of laserlike focus doesn't just let you know what items not to start selling; it also lets you know what items to *stop* selling. Since it opened its doors, Home Depot has been one of biggest sellers of unfinished wood furniture, developing it into an $80-million-a-year business. So why did the company recently stop selling it? Marcus says he wants to be the power retailer in any category. That means he's not about to let competitors beat him on price or selection or any other measure on any item he sells. But that was precisely what he saw happening not long ago when Home Depot started bumping up against players like IKEA. The Swedish retailer, with five stores in the U.S., dedicates the majority of its average store's 200,000 square feet to furniture, compared with Home Depot's 2,000 to 7,000 square feet for furniture. Offering customers a bigger selection drives up volume, enabling IKEA to keep prices even lower than Home Depot's. Says Marcus: "If we can't be the best in a category, it goes out of the stores." The chain will use the former furniture space to expand its selection of floor tiles and wallpaper.

J.C. Penney got smart in the 1980s by refocusing on—and sticking to—its plan to become a national department store. Long mentioned in the same breath with Sears and Montgomery Ward, Penney has broken away from that pack by concentrating on apparel and home furnishings, the products that drive traffic in the malls where most of its stores are located.

Persuading customers that Penney was a department store took more than just launching some snazzy ad campaign or splashing a slogan across the store's shopping bags. Products that brought in $1.5 billion a year—home electronics, appliances, photography equipment—went out of the stores. At the same time Penney had to convince higher-grade national brand apparel manufacturers, who wouldn't sell to the chain because of its discount, second-string image, that it was changing all that. Proof came in the form of expanded departments for women's and men's apparel—more than double the space previously given—and more boutique-like looks for items like lingerie. Crowded circular racks and clearance bins that scream "bargain basement" were replaced with sleek wooden shelves and more contemporary looking displays. Says Robert B. Gill, Penney's chief operating officer: "Changing over to a department store has been a long journey, but we never lost sight of what we wanted to be."

Says a supplier about J.C. Penney: "They pay their bills on time. Do you know what that's worth?"

Respect for the downside of debt has given these companies some of the healthiest balance sheets in retailing. The Limited has no operating debt and plans to open 2.75 million square feet of space this year, equal to about 12 two- to three-floor department stores. The Gap continues to remodel older stores and open new ones—the company will spend $190 million on such expansion this year—yet the interest it pays equals less than 1% of sales. Penney will spend $200 million this year to modernize 450 stores. With so many chains in intensive care, manufacturers notice such stability. A junior sportswear executive who sells to Penney says bluntly: "They pay their bills on time. Do you know what that's worth today?"

Yet for all their financial strength and market-share muscle, retailing's front-runners are rarely satisfied with their performance. The Limited, champ of the specialty store format, has earned the right to kick back and coast for a bit. It doesn't. No fewer than seven different stores fall under the Limited umbrella—Limited stores, Express, Victoria's Secret, Lerner's, Lane Bryant, Henri Bendel, and Abercrombie & Fitch. The company operates two catalogues, Victoria's Secret and Brylane, and owns Mast Industries, the division that manufactures some of the clothes sold in the stores.

Sales at the Limited have more than doubled since 1985, to $4.6 billion. Total return

Gap President Millard S. Drexler envisions lots of growth in newer stores like GapKids and babyGap.

REPORTER ASSOCIATE *Thomas J. Martin*

ANDY FREEBERG

Executives at Penney's Dallas headquarters help cut down buyers' travel time with direct satellite broadcasts of different clothing lines to the stores.

to investors during the 1980s averaged 53.1% a year, making it No. 1 by that measure on FORTUNE's list of the top 50 retailers. With the exception of Bendel and Abercrombie, the average store size in each of the Limited's groups has doubled since 1985, awarding them the clout—and cheaper rent—typically given to a mall's anchor department store.

Even after this phenomenal growth, CEO and founder Leslie Wexner just can't keep still. Managers who work for him politely say he's "not an easily satisfied guy." Replies the soft-spoken Wexner: "Good. There's always room for improvement. I daydream about perfection. You never get to 100%, but what is tantalizing and makes work fun is just the possibility we can get close."

Robert Grayson runs the 825-store Lerner division. When he and his associates were planning the new Lerner's flagship store that recently opened on 34th Street in Manhattan, they designed it not to meet the expectations of their budget-minded customer but to exceed them. The store is big and luxurious, with polished marble floors, spacious private dressing rooms, and seating areas throughout stocked with the latest magazines—all the amenities you would not expect to find in a store where the average customer purchase is $30. The idea, says Grayson, is to "overshoot the customer in everything—style, ambiance, selection—except price, so that she doesn't want to shop anyplace else." The result is that Lerner's effectively locks out weaker competitors who don't have the financial strength or merchandising flexibility to match its amenities or prices.

Once the champion retailers have customers hooked on attractive merchandise and super-looking stores, they fortify operations with technological might. Toys "R" Us CEO Charles Lazarus sounded like a kid at Christmas during the annual meeting in June, when he spoke about the company's newly opened $40 million distribution center in Rialto, California. The 612,000-square-foot facility can house over 80,000 pallets, or storage bins, by stacking them 50 feet high along narrow aisles. Operators get the goods with cherry picker–type trucks guided by wires in the floor and use laser scanners to identify the cartons. The Rialto center holds 45% more merchandise than the company's existing warehouses and takes up two-thirds the space. It lets the company get toys out of the warehouse and onto store shelves faster, keeping handling costs low and enabling Toys "R" Us consistently to beat anyone else's prices.

Penney takes its technology advantage and puts it right in the hands of employees. Several times a week buyers in all its large metropolitan stores can tune into direct satellite broadcasts from headquarters in Dallas. If merchandise managers sense that, say,

EIGHT HEALTHY RETAILERS . . .

COMPANY	SALES millions of dollars	PROFITS millions of dollars	CAPITAL EXPENDITURES % of sales	INTEREST COST % of sales
WAL-MART STORES	$25,921.8	$1,075.9	3.68%	0.53%
J.C. PENNEY	$16,405.0	$802.0	2.91%	1.85%
TOYS "R" US	$4,787.8	$321.1	7.77%	0.93%
THE LIMITED	$4,647.9	$346.9	6.85%	1.25%
DILLARD DEPT. STORES	$3,159.5	$148.1	4.56%	2.91%
HOME DEPOT	$2,771.9	$112.0	6.86%	0.58%
NORDSTROM	$2,671.1	$114.9	6.31%	1.84%
THE GAP	$1,586.6	$97.6	5.94%	0.17%
. . . COMPARED WITH ONE THAT ISN'T				
R.H. MACY	$7,222.5	($179.4)	2.22%	9.91%*

Figures are for fiscal year ended Jan. 1990 except for Macy's, which are for four quarters ended Jan. 1990.
*Includes interest expense not paid out in cash.

The key to good service is knowing what it means to your particular customer and then delivering it. Always.

jump suits are going to be a hot-selling item, they can order up a few samples from manufacturers and show that selection, along with different colors and fabrics, via satellite to buyers all over the country. Buyers can then place their orders with headquarters or, in some cases, directly with suppliers who are hooked into an electronic ordering system. These satellite feeds allow the retailer not only to cut travel time among buyers but also to react faster to changes in styles and give each store an individual look.

Dillard, one of retailing's two superstars from Arkansas—the other is Wal-Mart—began its love affair with technology in its earliest days. "I don't how you're supposed to make intelligent decisions without the facts," says William Dillard Sr., who opened his first store in 1938, "and computers give me the facts."

Since nearly 50% of the company's stores are those it has acquired since 1984—the latest coming from the J.B. Ivey & Co. chain, with 23 stores in the Carolinas and Florida—quickly getting them up and running as Dillard stores is critical. Managers' near-fanatical focus on technology allows them to install point-of-sale registers that tie into computers at headquarters, tag merchandise with bar-coded labels—thereby capturing customer information at the register—and reopen for business, all usually within a week.

With that kind of information at their finger tips, the smart players can listen closely to customers. "The common thread among retailers who really are doing it right," says the Limited's Wexner, "is that they realize the customer is the one calling the shots, not the other way around."

His major gripe with the textile firms that make fabrics for the Limited's clothing is that they don't realize this. "We'll ask these firms to make rayon, and they say, 'No, we make only Orlon.' When we tell them that Orlon is not the fabric our customers are telling us to buy, they'll come back with a comment like 'Let us analyze your sales and we'll tell you what to buy,' " Wexner says, shaking his head. "I want to tell them, 'You've got beans for brains. Don't you know the customer is more sophisticated than that?' "

NOWHERE is this sophistication more evident than in the type of service shoppers demand. According to a recent study by the U.S. Office of Consumer Affairs, between 37% and 45% of people who are unhappy with the service they receive do not complain. They simply go someplace else.

Does that mean if you're not carrying packages to customers' cars or visiting them at home to drop off the latest catalogue, you risk driving them away? No. The key to good service is knowing what it means to your particular customer. Is it a consistent store layout that lets her find what she needs quickly, whether the store is in Bangor, Maine, or

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downtown San Diego? Is it opening an additional checkout line when more than three people are waiting? Whatever the type, define it and then deliver it. Always.

Home Depot succeeds where other do-it-yourself chains stumble because it staffs stores with knowledgeable sales help, not the kid who can tell you only that Sheetrock is in aisle seven. If a customer is thinking of putting up, say, a stockade fence in his yard, a Home Depot salesperson can explain how many sections to order, what kind of posts are needed to reinforce the fence, and even what size nails to use. Says CEO Bernie Marcus: "Our customers wouldn't be trying a lot of these home improvement projects if they didn't think we could really help walk them through it."

Emphatically aware that a retailer's fortunes can disintegrate fast, the industry leaders spend heavily to spot tomorrow's successes—something else their weaker competitors can't do. You may not be familiar with Cacique, a shop for French lingerie, or a men's clothing store called Structure, but the Limited's Wexner is betting you will be. Those stores are what Wexner calls his toddlers, new businesses he envisions as the Limited's stars of tomorrow. "It's really exciting because last year I didn't know what they would turn out to be," he says. "Now I can see the next tier of growth in these baby businesses and how they are helping to energize the larger ones."

IN 1985, Wexner paid an estimated $10 million for Henri Bendel, an upscale women's boutique that had long been a mecca for style setters in Manhattan. Ownership gives the Limited entry into the land of higher-priced designer merchandise and a franchise name that evokes style and quality. "One of the nice things about Bendel was that it had a great name but was very small," says Wexner. "That means we can reinvent it to what the customer's expectation is." By 2000 Wexner envisions between 50 and 100 Bendels across the U.S.

Trying to play catch-up with this crowd is just miserable. Lazarus of Toys "R" Us says that as recently as two years ago his children's clothing chain, Kids "R" Us, could get only 50% to 70% of the goods it wanted from brand-name clothing makers. That's because these manufacturers were doing a big business with department stores. Today, says Lazarus, "we pretty much get everything we want. I don't think that's because manufacturers have increased capacity. I think it's because they are looking at balance sheets to see who is going to be able to pay the bills." In other words, because Lazarus is getting more merchandise, his competitors are getting less.

That's the way retailing is. The National Retail Federation forecasts that, after adjusting for inflation, sales of general merchandise, apparel, and home furnishings will increase only 3% this year and 4% in 1991. With consumer spending so sluggish, there just isn't much growth left over after market-share leaders have taken their huge bite. Says Gary Crittenden of the management consulting firm Bain & Co.: "Retailing is an I-win-you-lose business. If you're not gaining market share, you're losing." That's something the winners haven't forgotten and the losers are learning anew. F

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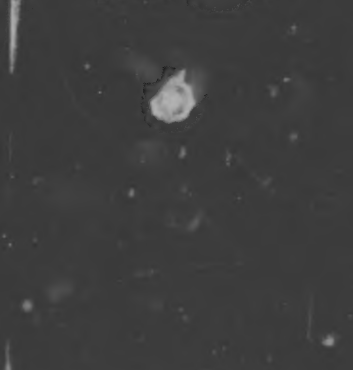

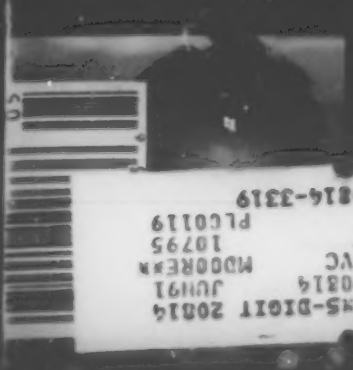

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EDITOR'S DESK

Editor Holt tasting the Orient in New York

SINCE we brought you our first special issue on the Pacific Rim last fall, the dynamic countries of the region have continued their headlong growth—many at an annual rate close to 7%. The Rim is full of opportunities to be seized. Says our international editor Donald Holt, who directed a team of 30 editors, writers, reporters, designers, and photographers to produce the issue: "Asia is no longer on the threshold of becoming an important economic power. It's here now." But don't expect this new mega-market to pop open like a fortune cookie. There are complexities you may never have dreamed of. This single issue, may I modestly suggest, contains the information you'll need to tackle them.

If you thought all the hard-chargers came from Japan, get acquainted with ten super-aggressive companies from the rest of the region, profiled by Louis Kraar, a member of our board of editors who opened our first Asia bureau eight years ago. With help from reporter Susan Moffat and Tokyo assistant Cindy Mikami, Kraar also chronicled 20 intriguing people you should know.

Louis Kraar back home from his Asian travels

Ford Worthy crosses the harbor in Hong Kong.

Rapoport (center) with Moffat (right) and Mikami

Hong Kong bureau chief Ford Worthy turned up fascinating demographic and sociological information that marketers ought to covet. Many Asians are poor no more. And they spend on quality. The intellectual debate in the U.S. over whether the Japanese will change may never be settled—until they do change. Tokyo chief Carla Rapoport examines the question and comes up with some surprising facts.

Designer Keehan (left) with editor Krist

Despite what you hear—correctly—about Houston-like skylines, Asia does not mirror the West. To help you take the Rim on its own terms, reporter Sara Hammes, who spent a year in Seoul before joining FORTUNE, has written an insider's guide.

To guide you through this issue, designer Maria Keehan produced a striking layout. Photo editor Elizabeth Krist worked nights in New York coordinating photographers who were starting their days just as she was supposed to be finishing hers.

The result, we hope, will turn your interest in Asia into understanding. This is the time to learn more about the Pac Rim.

Marshall Loeb

MANAGING EDITOR

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RIGHT: Late afternoon at an intersection in the Ginza district of Tokyo. Photograph by Ken Straiton.

COVER: Photographs (clockwise from top right) by Paul Chesley (Aspen), Scott Rutherford (Black Star), H. Edward Kim, Jeffrey Aaronson, Peter Charlesworth (JB Pictures), R. Ian Lloyd, Takeshi Yuzawa, and (top left and center) Munshi Ahmed.

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Asian neighbors welcome the blue-suited legions as customers, investors, and benefactors. But they wish the Japanese had more competition in the region from the West. *by Ford S. Worthy*

ARE THE JAPANESE BUYING TOO MUCH? 99

As of now, there's no real cause for anxiety. Japan's investment in the U.S. is heavy, reaching $70 billion last year. But much of that has benefited America. *by Brenton R. Schlender*

RANKINGS

THE FORTUNE PAC RIM 150 102

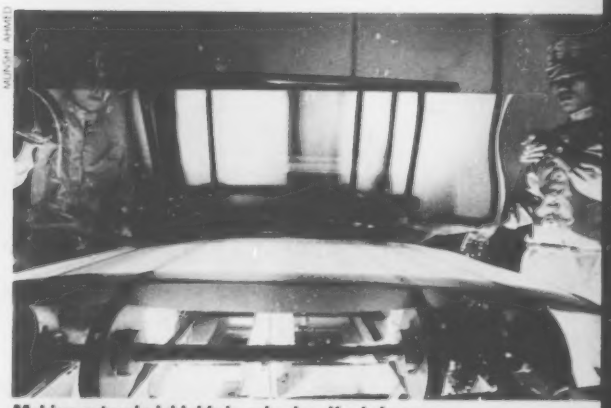
Our second ranking of the largest industrial corporations on the Asian side of the Pacific Rim reaffirms Japan's preeminence—and South Korea's role as its only challenger.

"Linked with Singapore, Malaysian and Indonesian labor will be very competitive in the markets of the world."
PAGE 8

"I've never seen a decision made by anybody except the chairman."
PAGE 25

"The era of seemingly shy, weak women in Japan is over. Sleeping Beauty has awakened."
PAGE 80

"To the Japanese, industries are like babies, and you never sell a baby for survival. Here it's as if every company is adopted."
PAGE 99



MUNSHI AHMED

Making auto windshields in suburban Kuala Lumpur

IAN LLOYD

Singapore Airlines crew members train for emergencies.

A Japanese tourist takes in the sights by trishaw.

THE JAPANESE TALK ABOUT THEMSELVES

As the decade begins, ordinary Japanese are confident of their economic prowess, not so sure of their political clout, and not eager to spend much on U.S. or European imports. This poll was conducted for FORTUNE *by Chuo Chosa Sha, a Tokyo research organization.*

Do you consider Japan a political superpower?

YES	26%
NO	57%
NO OPINION	17%

Do you consider Japan an economic superpower?

YES	65%
NO	26%
NO OPINION	9%

How does your standard of living compare with that of Americans and Europeans?

BETTER	14%
ABOUT THE SAME	32%
WORSE	32%
UNDECIDED	22%

With your present income, would you be able to buy a house?

NO	76%
YES	17%
UNDECIDED	7%

What would be the single most important factor in improving your lifestyle?

HIGHER WAGES	22%
SHORTER HOURS	17%
BECOMING LESS OF A WORKAHOLIC	14%
BETTER HOUSING	12%
LONGER VACATIONS	8%
MORE LEISURE FACILITIES	8%
OTHER	4%
UNDECIDED	15%

Do you consider Japanese products superior to American products?

YES	71%
NO	11%
NO OPINION	18%

Do you consider Japanese products superior to European products?

YES	72%
NO	11%
NO OPINION	17%

Would you buy . . .	YES	NO	NO OPINION
. . . an American car?	8%	86%	6%
. . . a European car?	16%	77%	7%
. . . an imported TV?	3%	91%	6%

ON THE Japanese economy, optimists and pessimists are almost equally divided. Among those looking forward to endless expansion, many are banking on technology. Says a 26-year-old office worker who has a college degree: "Robots will increase production." Nor is that attitude restricted to the young. An 80-year-old business owner has a one-word explanation for his confidence: "Computerization." Adds a self-employed 56-year-old woman: "Automation will make things better." A housewife, 56, is hopeful because "the country is solid, unified." A 26-year-old woman who works in an office is putting her faith in Japan's "money surplus." Those who are nervous about the future see fierce competitors coming at them from all sides. Says a 27-year-old high school graduate who has a job as a laborer: "The growing European economy will be a negative factor for Japan." A 48-year-old man who owns his own business is worried that the newly industrializing economies—South Korea, Singapore, Hong Kong, and Taiwan—will "catch up." A 44-year-old salaryman is concerned that the various structural changes Japan is making in response to pressure from the U.S., such as moving to a more consumer-based economy and encouraging imports, "will hinder growth."

Do you think the Japanese economy will get better or worse in the future?

MUCH BETTER	13%
SOMEWHAT BETTER	22%
SOMEWHAT WORSE	28%
MUCH WORSE	6%
NO OPINION	31%

ALMOST HALF of those who now respect the U.S. less resent American pressure on Japan to lower its trade surplus. Says a 54-year-old salaryman: "When times are good, all is well. But when the U.S. economy started to deteriorate, they started putting the burden on us." Adds a 26-year-old woman who owns a business: "There have been too many economic demands, one after another." A recent college grad who has not begun working thinks the U.S. has been "one sided." A 49-year-old entrepreneur says, "America treats Japan as a colony." A 38-year-old housewife is annoyed by "the pushy, arrogant attitude of Americans on TV." A retired man, 64, objects to what he sees as "condescension" by Americans, which he attributes to racial prejudice. Another retiree is irritated because Americans "do not admit the hardworking nature of the Japanese." Of those whose respect for the U.S. has increased, many remain grateful for American aid after the war. Says a 59-year-old laborer: "They helped us out of ruin and we are prospering today because of them." Adds a housewife who was 12 when the war ended: "I'll never forget the attitude of MacArthur." A 59-year-old retired man appreciates the U.S. for "being a superpower and a melting pot at the same time."

Has your respect for the U.S. increased or decreased in the past five years?

INCREASED	11%
DECREASED	33%
NO OPINION	56%

TEN TO WATCH OUTSIDE JAPAN

Aggressive conglomerates from Singapore, Malaysia, South Korea, Thailand, and Taiwan are ready to challenge both the Japanese and global giants of the West. ■ by Louis Kraar

PETER CHARLESWORTH—JB PICTURES

At this modern factory near Bangkok, Siam Cement Group of Thailand produces engines for Toyota pickup trucks.

FROM THE burgeoning Asian economies outside Japan—from South Korea and Thailand, Singapore, Malaysia, and beyond—a new breed of corporate giant is rising to challenge top businesses in both the Orient and the West. Little known in the U.S., and less understood, the best Asian companies outside Japan are substantial enterprises with over $1 billion in annual sales, first-class management, fat profits, and scorchingly hot growth rates. These are the bluest blue chips of their native lands, and as they begin to weave alliances with the likes of IBM and Toyota, they are shouldering into the highest levels of world competition.

Big as they are now, these emerging companies may become overpowering in just a few more years. Compared with the Japanese, they are late arrivals in global markets, but they are bound to catch up fast. More freewheeling than their Japanese counterparts and most big American multinationals, the ten companies listed on page 26 are developing a fascinating new mid-Pacific management style that melds elements of traditional Asian entrepreneurialism with business-school rigor. One early result: No longer dependent on cheap local labor as a competitive edge, they are pushing research in electronics and other fields, and opening factories overseas—sometimes, ironically, to exploit other countries' cheap labor.

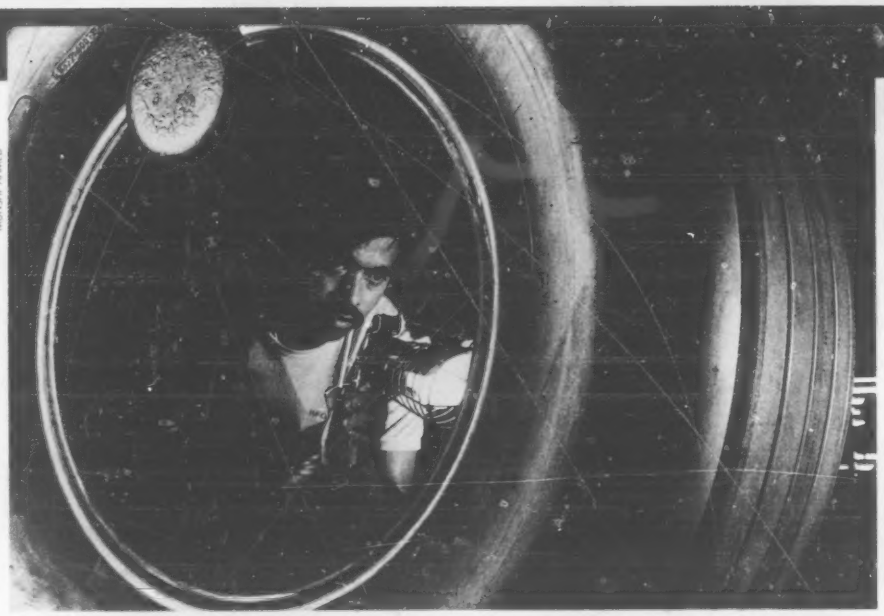
Products of a vast region that embraces diverse languages and cultures, they fall into three broad categories: enterprises controlled by governments, such as Singapore Airlines; companies—or more often groups of companies—founded and controlled by Overseas Chinese families, including CP Group in Thailand; and South Korean conglomerates, or *chaebols*, such as Samsung, which also remain under founding-family control.

Picking ten out of all the enterprises flourishing in the Pacific Rim is something of an arbitrary exercise. Some are privately held, making comparisons with public companies difficult. Many Asian groups behave as a single entity but do not report on a consolidated financial basis. Frequently the force that unifies them is not accounting but the ambition of a powerful dynast who is both owner and CEO. Whatever their circumstances, every company on FORTUNE's list is venturesome, long successful, and guided by a strategy that promises continued growth and greater global reach.

Though some Asian stock markets inhibit participation by outsiders, the determined

REPORTER ASSOCIATE *John Labate*

investor can find ways to play most of these companies. Seoul bars stock purchases by foreigners, but shares in the Korea Fund—a portfolio of the country's blue chips including components of every Korean conglomerate on FORTUNE's list—trade on the New York Stock Exchange. Siam Cement of Thailand officially restricts foreign ownership to 25%, but the rule is impossible to enforce. Anyone may buy those securities on the Bangkok Exchange. The Li Ka-Shing Group consists of four companies that trade on the wide-open Hong Kong market. Securities of Malaysia's Sime Darby and the other public companies are listed on their home exchanges.



MUNSHI AHMED

In Malaysia, Sime Darby and joint venture partner Michelin produce tires for 747s and other aircraft.

MEMBERS of the first category—those backed by governments—are lonely standouts in a region littered with inefficient state corporations. In market-minded Singapore, the government demands that its commercial enterprises earn their own way and then go public. **Singapore Airlines**, the world's most profitable airline, is a prime example of this policy. Says Deputy Chairman Lim Chin Beng: "From the very beginning, Singapore Airlines has operated as a commercial enterprise without any subsidy, handout, or government interference." That's a slight exaggeration: The airline won landing rights in 37 countries with a little help from the state. International carriers are eager to land in strategically located Singapore, and the government welcomes all comers. In return, it demands reciprocal landing rights for SIA.

Spun off nearly 18 years ago from a joint venture with neighboring Malaysia, the carrier has been publicly traded since 1985. It is now 54% state owned, but the government plans eventually to reduce that stake to around 30%. Cash-rich in an industry laden with debt, SIA has the youngest fleet of any major international airline.

It also has some of the youngest flight attendants. The "Singapore girls," who provide Asian hospitality plus the spice of sex appeal, must retire before they turn 40, a policy that would be illegal for an American carrier because of U.S. age discrimination laws. SIA outspends rivals on meals and serves Taittinger champagne in business class. The formula works: The airline fills an average of 78% of its seats, vs. 68% for all international carriers.

Success hasn't quenched the ambition of Chairman Joseph Y. Pillay, whose management theory boils down to "just working at it all the time." To boost competitive strength in the U.S. and Europe, SIA has allied with Delta and Swissair, sealing the deal with a three-way swap of minority stock interests. The airline plans to spend $10 billion on new planes and ground facilities during this decade.

Sime Darby of Malaysia, another state-controlled enterprise, is an expansive conglomerate with manufacturing and trading operations that sprawl across Southeast Asia to Australia. The government indirectly owns about a third of the shares—Kuwait has 6%—but has a long track record of leaving management alone. Sime Darby's CEO is a local prince named Tunku Ahmad Yahya (*tunku* means prince). An economics graduate of England's University of Bristol, where he captained the soccer team, Tunku Ahmad, now 61, began as an accountant.

"Rather than bemoaning our fate of being exploited by the multinationals, we joined the club," he says cheerfully. He knew just how to gain admission. Back in 1975, Sime Darby was a complacent British outfit that owned massive rubber, palm oil, and coca plantations in Malaysia. Instead of nationalizing the company, the Malaysian government bought a controlling interest in one fast swipe on the London Stock Exchange.

Sime Darby's return on investment reached 19.6% in 1989, up from 14.8% five years earlier. The old plantations have "paid the rent" in Tunku Ahmad's phrase, while Sime Darby cautiously diversified into regional ventures ranging from BMW dealerships to real estate development to the manufacture of bathtubs. Entering the condom business on a world scale, Tunku Ah-

THE UP-AND-COMERS OF ASIA

	SALES in millions	PROFITS in millions	BUSINESS ACTIVITIES
SAMSUNG *(South Korea)*	$35,189	$515	Electronics, shipbuilding, insurance, trading
DAEWOO *(South Korea)*	$19,981	$115	Electronics, construction, autos, heavy machinery
LUCKY-GOLDSTAR *(South Korea)*	$19,964	$285	Electronics, chemicals, trading, construction
SSANGYONG GROUP *(South Korea)*	$7,422	$172	Cement, trading, oil refining, construction
FORMOSA PLASTICS *(Taiwan)*	$6,613	$425	Plastics, chemicals, textiles, plywood
LI KA-SHING GROUP *(Hong Kong)*	$3,481	$1,644	Real estate, telecommunications, energy, trading
SINGAPORE AIRLINES *(Singapore)*	$2,653	$625	International airline
CHAROEN POKPHAND *(Thailand)*	$2,600*	N/A	Poultry breeding and processing, feed mills
SIME DARBY *(Malaysia)*	$1,569	$101	Rubber and other plantations, trading, tires
SIAM CEMENT *(Thailand)*	$1,235	$155	Cement, machinery, construction materials

All figures are as of 12/31/89, except Sime Darby (6/30/89) and Singapore Airlines (3/31/90).
* Estimate

- mad recently bought Dur-A-Vend, a British company that makes a product called Jiffy. Its slogan: "Do it in a Jiffy."

IN THAILAND, a kingdom where corruption is as common as orchids, **Siam Cement** thrives on integrity. A royal connection enables this conglomerate to prosper without making ethical compromises that might disquiet potential Western partners. Founded by King Rama VI in 1913 to produce cement, which Thailand previously had to import, the enterprise has grown to 50 operating companies producing building materials, automotive engines, petrochemicals, and more.

Thais regard anything associated with their King as almost sacred. That reverence extends to Siam Cement, some 40% owned by the King's Crown Property Bureau, a sort of charitable foundation that spends its profits on social welfare programs.

High ethical standards can be a short-term disadvantage, but group president Paron Israsena, 62, argues that they pay off in the long run. For example, last year the company formed a $117 million joint venture with Guardian Industries of Michigan to manufacture plate glass. Then Thai-Asahi, a well-connected competitor with a stranglehold on Thailand's plate-glass market, induced government agencies to block Siam Cement's entry into the business. But Thai public opinion favored Siam Cement, and the deal won approval this summer. Says Paron, "A lot of people spoke up for us."

Paron expects revenues to surge during the next five years as new manufacturing joint ventures begin production. Siam Cement will make glass bulbs for TV tubes with Asahi of Japan, rotary compressors for air conditioners with Mitsubishi Electric, and petrochemicals with Dow Chemical.

Siam Cement apparently does some creative accounting—but in reverse. Says Timothy P. McKenna, research manager at Jardine Fleming Thanakom Securities in Bangkok: "Based on generally accepted accounting standards, Siam Cement is understating its earnings by 20%." Even so, conservative Siam Cement last year reported that profits—after nearly doubling in 1988—rose another 45%, to $155 million. McKenna rates Siam Cement as "the best value" in the Thai market.

The only notable thing the company does poorly is communicate with its shareholders. Recently Siam Cement invited brokerage firms to a briefing, but refused to provide any information not published in its annual report. Several angry guests stormed out before lunch was served.

The second group of emerging companies is run by Overseas Chinese, industrious people of Chinese descent who live outside mainland China. Members of this canny minority have long dominated commerce in Southeast Asia. Most of their businesses are private firms in which the patriarch makes all the decisions and the payroll is crammed with relatives, some of whom may not contribute much. Now a few Chinese entrepreneurs, determined to build lasting enterprises, are hiring professional managers, taking their companies public, and sending their heirs to American business schools.

LI KA-SHING may well be the richest man in Hong Kong, where he built a personal fortune of $2.7 billion trading real estate. Considerate and gifted at nurturing relationships, he runs four public companies that make up what might be called the **Li Ka-Shing Group**. These companies do not consolidate accounts, but Li, 62, commands them all through his 40% ownership of Cheung Kong, a property developer. Cheung Kong, in turn, controls the other three: Hutchison Whampoa, a conglomerate; Hongkong Electric, a utility; and Cavendish, an investment holding company. Their combined annual profits add up to more than $1 billion—more than Nissan or Toshiba earned last year. The return on equity of

Cabin crews of Singapore Airlines are known for charm—but they're trained for emergencies.

Hutchison, the largest unit, has averaged a meaty 19% annually over the past decade.

Li sent his two sons to Stanford. He maintains traditionally tight financial controls, but he gives his subordinates, both Chinese and Western expatriates, a degree of autonomy that might shock some of his peers. His enterprise has grown far too complex for any one person to run. Hutchison, for instance, owns port terminals handling over half of Hong Kong's container traffic, a mobile telephone venture with Motorola, a TV satellite, and a coal-trading partnership with Total of France.

Simon Murray, 50, a Briton who served in the French Foreign Legion, is Hutchison's managing director and Li's ambassador to Western companies. Says Murray, an experienced Asia hand: "Li is a brilliant strategist—and he leaves me to run the business."

Li insists that Hong Kong, which reverts to Chinese rule in seven years, "is still a good place to make a profit." But he is hedging a bit. In 1986 he bought control of Husky Oil, Canada's largest integrated independent oil company. He is also investing $1.6 billion in a 204-acre development in Vancouver that amounts to practically an entire township of apartments and office buildings. If Hong Kong someday sinks into the sea, Li will not sink with it.

In Thailand, another Overseas Chinese family has turned chicken feed into big profits, building a multinational called **Charoen Pokphand**, or CP Group. Chairman Dhanin Chearavanont's father and uncle started the business in 1921 as a small Bangkok shop that sold seeds. Since then CP has grown into a huge agro-industrial group of some 100 companies, operating from China to Turkey. The group, most of whose member companies are privately owned, does not disclose total profits, but bankers say it can finance relentless expansion.

CP has prospered by creating an integrated poultry industry in Thailand, where labor remains relatively cheap. The company produces feed and breeding stock, processes birds, and often exports them to Europe and Japan as frozen dinners. Nothing is wasted: Chicken droppings are sold for fertilizer. Trying to cover every base, CP is also a major international commodity trader, a wholesale distributor of foodstuffs, and a Kentucky Fried Chicken franchisee in Bangkok and China. The company has teamed with Oscar Mayer to make packaged pork and with Mitsubishi to breed prawns.

STAG CHEN-AGAMEN

LINCOLN POTTER-GAMMA-LIAISON

BRIANO GROSS

Founder Y. C. Wang (top) still makes all decisions at Formosa Plastics. Dhanin Chearavanont (left) is chairman of Thailand's CP group. Briton Simon Murray (right) runs a major part of Li Ka-Shing's group in Hong Kong.

Another round of diversification is pushing CP far beyond food. Says executive vice president Ajva Taulananda: "Our founders were entrepreneurs, so we're always looking for new things to do." CP is building a $400 million petrochemical plant with Belgium's Solvay to make feedstocks for plastics, which the company also plans to produce. The Thai group has launched 15 businesses in mainland China, where Ajva claims CP's Overseas Chinese identity will help it flourish. The firm, which has several joint ventures in the People's Republic, makes motorcycles there with Honda and beer with Heineken.

Best known for such products as cars and forklifts, Daewoo Group of South Korea also makes pianos.

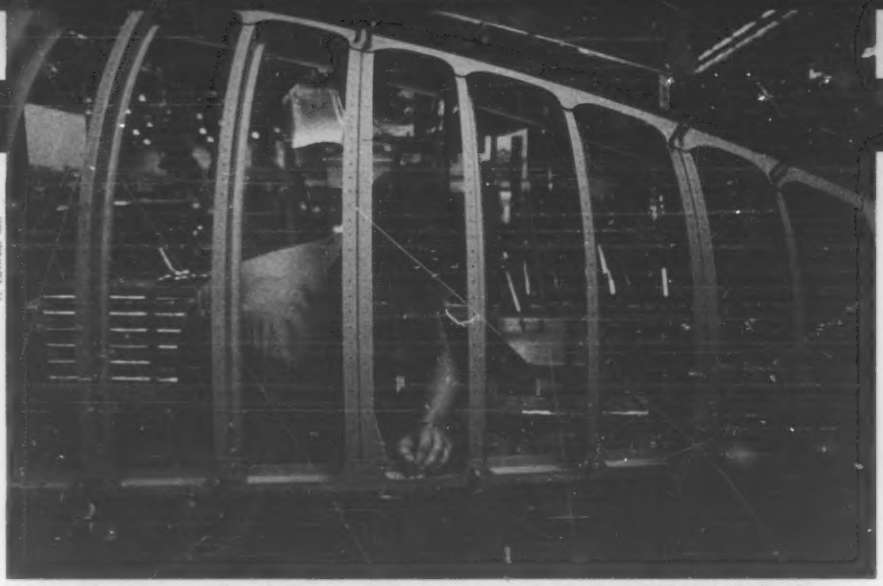
H. EDWARD KIM

FIFTEEN HUNDRED miles east, in Taiwan, the largest nongovernment enterprise is **Formosa Plastics Group,** founded and still dominated by Chairman Y. C. Wang, 73. Wang quit school at 15 and started out as a rice merchant and lumber dealer; he went on to pioneer Taiwan's plastics industry. The group he runs—a mix of public and private companies—is the world's largest producer of polyvinyl chloride (PVC), the plastic used in plumbing pipes. Formosa Plastic, which operates 14 plants in the U.S., is the top producer of PVC pipe in America.

A frugal multibillionaire, Wang commands his 44,000 employees with hands-on attention to the smallest details. Says his son Winston, 39, a company manager who earned a Ph.D. in chemistry at the Imperial College of Science and Technology in Brit-

ain: "I've never seen a decision made by anybody except the chairman."

Most days the patriarch lunches with subordinates, who eat before he arrives so they can concentrate on his torrent of queries. Dismayed at the opportunities Wang saw for suppliers to corrupt his purchasing managers, he had the purchasing process computerized so that managers and vendors never meet face-to-face. Says Wang: "The way that one executes a job can always be improved, so rationalization has no end." His idiosyncratic management style pays off handsomely: Formosa Plastic's pretax return on capital topped 33% last year.



M. EDWARD RAY

Pushing into aerospace, Korea's Samsung makes components for Boeing 757 jets, including doors.

SOUTH KOREA is home to the third group of emerging Asian companies. Dominated by some 30 conglomerates, or *chaebols*, Korea's economy achieved world prominence by producing many of the same goods as Japan at a lower price. But that strategy no longer works: During the past several years local labor costs have shot up and the value of Korea's currency, the won, has risen sharply. The best-run *chaebols* are responding by automating their factories, setting up offshore plants in Southeast Asia, and hunting for new sources of profit.

Korean conglomerates all seem to be in the same businesses—electronics, shipbuilding, construction, and industrial equipment—but each reflects the personality of its boss. **Samsung** is Korea's leading producer of electronics, food products, pharmaceuticals, and paper. It also owns a baseball team. Started as a trading company in 1938, it is still controlled by descendants of the late founder, Lee Byung Chull. Greatly influenced by Japan—perhaps because he kept a second family in Tokyo with his Japanese mistress—Lee shaped his group of 38 companies along Japanese lines, picking managers by competitive exams and investing heavily in their training. *continued*

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Chairman Lee Kun-Hee, 48, third son of the founder, believes Samsung must change dramatically to prosper in the 1990s. Says he: "Unless we become one of the world's first-class corporations by the end of this decade, we simply can't survive." For years, Samsung flourished as an efficient, low-cost assembler of such products as television sets and microwave ovens. But those markets have matured. And with Samsung's Korean workers costing an average of $20,000 annually, vs. around $30,000 in Japan, Samsung can no longer just make cheaper versions of me-too products. Says Jee Seung-Lim, director of corporate planning: "Now we're focusing on higher-technology activities."

The difficulty is that as Samsung's competitors, from Texas Instruments to Sony, expand globally, they are increasingly reluctant to sell or license their technologies. So the scrappy *chaebol* is investing $1 billion a year, 6.2% of manufacturing sales, in research and development in such areas as photographic color film, biotech pharmaceuticals, and advanced semiconductors. Early results include a new high-speed fax machine, which Samsung claims is comparable to the latest Japanese models. The company's pattern already is clear: It started making memory chips just eight years ago and is now one of the world's top producers.

LEE IS ALSO striving to boost profits, which amounted to just 1.3% of sales last year. To streamline managers' work, Samsung now requires that once voluminous reports be shortened to summaries of a page or two. Managers cut the palaver at meetings by announcing how much the gatherings cost per hour. Overtime for office workers has plunged thanks to the campaign. Says planner Jee: "Now our people leave the office much earlier in the evening—no later than 8 P.M."

The founder of **Daewoo**, Korea's youngest major *chaebol*, is still in charge. Chairman Kim Woo-Choong, 53, started the group in 1967 as South Korea's first exporter of textiles. A legendary workaholic who sleeps only a few hours a night and almost never takes a day off, Kim has a special talent for global marketing. As Yoon Young-Suk, 52, president of the group's trading flagship says, "The whole organization has the smell of international dealings."

Daewoo is particularly adept at opening new markets, most recently the Soviet Union and Eastern Europe. "With those countries," says Yoon, "simple import and export are not going to happen." To sell its ships, autos, and electronic products to Czechoslovakia, for example, Daewoo takes payment in credits for Libyan oil, which it then processes at its refinery in Belgium. Similarly, it built a tire factory in Sudan in exchange for cotton, which it uses to make clothes in Korea.

Chairman Kim has relied mainly on acquisitions to extend Daewoo's tentacles into industry after industry, from autos to electronics to heavy machinery. He made the most of the subsidized loans the government once granted to all Korean conglomerates in their formative stages.

A power in both electronics and petrochemicals, **Lucky-Goldstar** is trying to make a dramatic transition with help from McKinsey & Co., the American management con-

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sultant. As insiders readily acknowledge, the family-controlled company needs to shed its slow-moving, bureaucratic ways to compete effectively in global markets. Says executive vice president Kwon Moon-Koo: "In the past our chairman ordered and controlled everything. He has announced that in the future management should be professional."

Lucky-Goldstar is counting on alliances with Japanese and Western companies to overcome what Kwon candidly terms "our shortcomings" in technology. The group is working with Siemens in telecommunications equipment, Honeywell in industrial control systems, and Hitachi in communications cable. The Korean company is moving plants overseas to key markets, making TVs and VCRs in West Germany, microwave ovens in Britain, and refrigerators in Italy. Says Kwon, echoing his U.S. consultants: "We no longer have the lowest costs, so we must compete by giving more service to customers."

THE MOST AGGRESSIVE *chaebol* of all may be **Ssangyong Group**, whose ambitious chairman, Kim Suk-Won, is at 45 the youngest head of any Korean conglomerate. The founder's son, Kim earned a degree in economics at Brandeis and developed a Korean ski resort on his own before inheriting the top job in 1975. "The only major product we had then was cement," remembers Kim, whose family controls the group.

Diversifying rapidly, Kim built an oil refinery in Korea in partnership with National Iranian Oil Co. When Khomeini took power, Kim bought out the Iranians. A cement-making joint venture in Singapore positioned Kim to build the Raffles City complex there, including a 73-floor hotel billed as the world's tallest. The contract is worth $400 million to Ssangyong Group.

In 1982 Kim realized that the rising yen priced his cement 30% below that of Japanese producers, so he spent three years fighting for the right to sell it in Japan. He was finally allowed in after he agreed not to underprice Japanese producers, an arrangement that boosted his profit margin.

Such tactics—combined with strong operations, solid financing, and heady rates of growth—make Asia's emerging companies a force that international executives can no longer afford to ignore. Says Mark Greenwood of First Pacific Asia Securities in Thailand: "These companies are aggressive, long-term players out to conquer the world." More often than not, they are trying to do that with Western partners—and winning.

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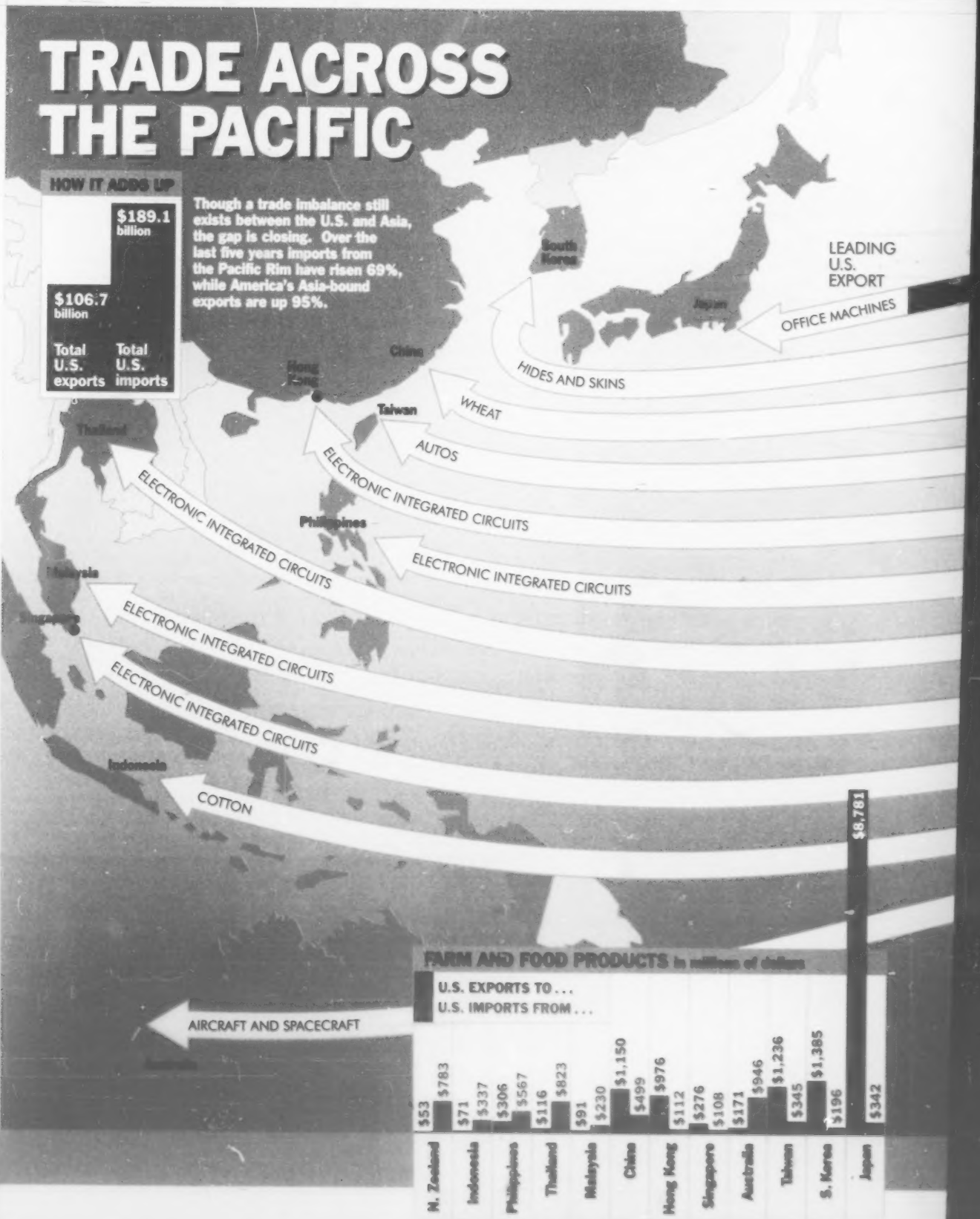
The Manila Peninsula, Manila
The Palace Hotel, Beijing
The Peninsula, Bangkok (opening 1993)
The Peninsula, New York
The Peninsula, Beverly Hills (opening 1991)

THE PENINSULA GROUP

TRADE ACROSS THE PACIFIC



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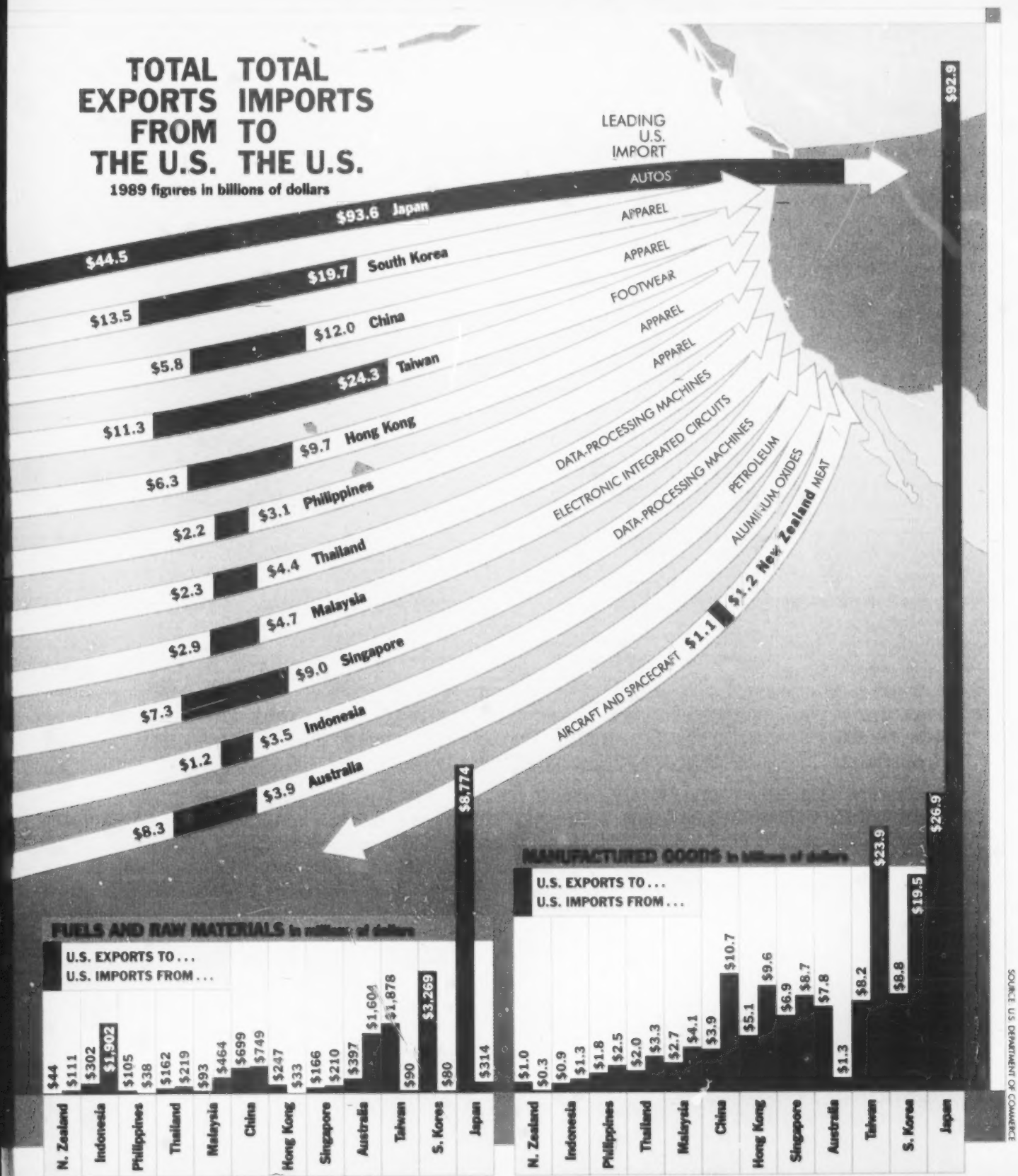

SOURCE: U.S. DEPARTMENT OF COMMERCE

THE PAC RIM 150

FORTUNE's second ranking of the largest industrial corporations on the Asian side of the Pacific Rim reaffirms Japan's preeminence—and South Korea's role as its only challenger.

It was business as usual for the 150 largest industrial companies in the Pacific Rim last year. In short, business was good and Japan got most of it. Among the Pac Rim 150—126 of which are Japanese—sales rose 19%, while profits climbed 26%. The leader of the pack in both categories was again Toyota Motor, which earned $2.6 billion on revenues of $60.4 billion.

South Korea's 11 biggest conglomerates also scored big gains, particularly in their fast-growing home market. Led by Samsung (No. 5) and Daewoo (No. 11), they generated $103 billion in sales, more than double those of the ten Australian companies on FORTUNE's list. No one else came close. Malaysia, New Zealand, and Taiwan each have only one company among the 150.

The region's comeback king was Taiyo Fisheries of Japan (No. 34), which netted $60 million—a 6,209% increase over last year's profit performance—by casting off two unprofitable subsidiaries. Japanese metal-bashers accounted for the other big turnarounds. Earnings soared 2,643% at Ishikawajima-Harima Heavy Industries (No. 56), which builds ships and factory automation systems among other things, and jumped 2,078% at Sumitomo Metal (No. 28).

Among the newcomers to the list, acquisitions fueled the rise of Goodman Fielder Wattie (No. 133), Australia's largest food company. But it was the unsated appetite of Japanese and American youth for videogames that boosted sales by 46% at Nintendo (No. 149).

The only money losers were Australia's Pacific Dunlop (No. 95), one of the world's largest makers of condoms, and Bond Corp. (No. 54). Pacific Dunlop blamed its $81 million loss on acquisition expenses. Entrepreneur and yachtsman Alan Bond blamed government regulators, short sellers of his stock, and a host of other bad breaks for his $795 million hit. The real killer: unexpectedly high interest rates that have driven his debt-laden empire to the brink of bankruptcy.

– Jung Ah Pak

RANK 1989	RANK 1988	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	PROFITS Rank	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank	EMPLOYEES Number	EMPLOYEES Rank
1	1	TOYOTA MOTOR[1]	Japan	60,443.6	2,631.1	1	49,672.8	2	25,761.0	1	91,790	9
2	2	HITACHI[2]	Japan	50,894.0	1,446.7	4	52,253.2	1	17,184.3	3	274,508	1
3	3	MATSUSHITA ELECTRIC INDUSTRIAL[2]	Japan	43,086.0	1,664.0	3	48,217.9	3	21,590.1	2	193,088	2
4	4	NISSAN MOTOR[2]	Japan	36,078.4	889.7	8	35,713.4	4	12,422.3	4	117,330	5
5	5	SAMSUNG	South Korea	35,189.1	515.1	15	28,415.6	7	3,561.8	27	176,947	3
6	6	TOSHIBA[2]	Japan	29,469.3	930.8	6	31,676.8	5	6,630.7	11	125,000	4
7	7	HONDA MOTOR[2]	Japan	26,484.3	758.5	9	17,206.1	15	6,789.6	9	71,200	13
8	8	NEC[2]	Japan	24,594.8	502.6**	18	25,204.6	9	5,192.1	15	104,022	7
9	11	MITSUBISHI ELECTRIC[2]	Japan	21,213.3	415.0	22	20,380.6	11	4,812.8	18	85,723	11
10	10	NIPPON STEEL[2]	Japan	20,767.0	607.9	12	26,143.7	8	5,486.2	14	64,504	14
11	9	DAEWOO	South Korea	19,981.4	114.5	77	28,986.2	6	4,645.3	21	91,056	10
12	13	FUJITSU[2]	Japan	18,734.1	541.1	14	19,770.5	13	7,239.4	7	104,503	6
13	14	MITSUBISHI MOTORS[2]	Japan	16,839.9	147.4	63	11,276.0	29	1,740.8	59	37,908	23
14	17	SONY[2]	Japan	16,680.2	563.8	13	17,811.1	14	6,867.6	8	78,900	12
15	12	MAZDA MOTOR[2]	Japan	15,572.5[3]	99.1[3]	84	9,906.2	32	2,599.2	40	28,382	31
16	15	MITSUBISHI HEAVY INDUSTRIES[2]	Japan	15,007.1	482.3	19	23,527.1	10	5,815.4	12	55,500	16
17	16	NIPPON OIL[2]	Japan	14,562.7	216.3	45	13,388.2	21	3,626.6	25	9,669	103
18	19	BRIDGESTONE	Japan	12,379.1	68.2	100	11,408.3	26	3,056.4	33	93,193	8
19	23	IDEMITSU KOSAN[2]	Japan	11,249.3[4]	13.1[4]	148	9,844.5[4]	33	327.4[4]	142	5,292[4]	133
20	26	NKK[2]	Japan	10,925.8	714.5	10	20,088.0	12	2,372.8	47	29,993	30
21	18	SANYO ELECTRIC[5]	Japan	10,486.9[6]	123.6	72	14,184.0	20	4,987.3	17	55,526	15
22	33	ELDERS IXL[1]	Australia	10,338.7	543.8	17	7,487.2	48	2,943.5	34	33,702	26
23	24	CANON	Japan	10,023.6[6]	277.5	28	11,379.6	27	3,830.6	24	44,401	21
24	25	SHARP[2]	Japan	9,927.5[6]	226.0	41	13,291.1	22	4,027.7	23	32,298	28
25	32	KOBE STEEL[2]	Japan	9,886.3	198.3	49	14,959.0	17	1,782.5	56	24,456	41

The definitions and concepts underlying the figures in this directory are explained on page 106. Footnotes appear on page 105.

RANK 1989	1988	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	Rank	ASSETS $ Millions	Rank	STOCKHOLDERS' EQUITY $ Millions	Rank	EMPLOYEES Number	Rank
26	21	ISUZU MOTORS[7]	Japan	9,867.7[6]	122.2	74	7,233.9	50	1,084.4	88	24,335	43
27	22	NIPPONDENSO	Japan	9,663.2[6]	348.4	25	9,005.8	35	4,159.7	22	49,390	18
28	31	SUMITOMO METAL INDUSTRIES[2]	Japan	9,643.0	451.8	20	14,759.5	18	2,868.0	35	26,753	33
29	27	COSMO OIL[2]	Japan	9,488.4	81.9	96	8,000.3	44	504.1	127	3,700	144
30	38	BROKEN HILL PROPRIETARY[5]	Australia	9,127.2	924.6	7	15,039.9	16	5,037.1	16	49,000	19
31	35	KAWASAKI STEEL[2]	Japan	9,081.2	378.1	24	13,266.2	23	2,767.8	37	24,455	42
32	29	SUNKYONG	South Korea	9,014.0	154.3	60	6,711.0	53	1,679.0	61	21,876	48
33	37	MITSUBISHI KASEI[2]	Japan	8,649.5[3]	157.0[3]	59	10,719.9	30	1,560.8	64	19,075	63
34	34	TAIYO FISHERY[2]	Japan	8,326.1[3]	60.3[3]	107	3,376.3	104	313.4	143	7,988	112
35	28	SHOWA SHELL SEKIYU	Japan	8,229.9	46.3	120	5,661.4	63	498.9	130	N.A.	460
36	30	ASAHI GLASS	Japan	8,088.4[6]	426.7	21	8,530.2	38	3,583.5	26	17,605	69
37	41	CHINESE PETROLEUM[9]	Taiwan	8,008.2	1,776.2	2	10,390.6	31	7,877.3	5	22,357	47
38	40	ASAHI CHEMICAL INDUSTRY[2]	Japan	7,991.6	268.2	30	7,560.3	45	2,443.8	44	22,908	45
39	42	DAI NIPPON PRINTING[2]	Japan	7,891.8	273.9	29	7,171.1	51	3,408.6	29	20,799	54
40	36	JAPAN TOBACCO[2,9]	Japan	7,769.1[4]	298.2[4]	27	11,308.8[4]	28	7,580.3[4]	6	26,700[4]	34
41	48	SSANGYONG	South Korea	7,421.8	171.9**	54	11,543.8	25	2,553.7	41	20,932	53
42	44	SUZUKI MOTOR[7]	Japan	7,403.9	50.2	117	4,702.0	77	1,283.7	71	23,544	44
43	49	FUJI PHOTO FILM[10]	Japan	7,367.7	650.2	11	9,280.8	34	5,754.7	13	19,677	59
44	46	TOPPAN PRINTING[2]	Japan	7,216.9	225.2	42	5,932.2	61	2,773.4	36	14,530	81
45	43	SNOW BRAND MILK PRODUCTS[2]	Japan	7,188.5	51.7	115	3,060.0	114	676.1	119	14,269	82
46	39	SUMITOMO CHEMICAL	Japan	6,938.0	253.1	34	7,497.6	46	1,455.1	66	12,537	89
47	61	KAWASAKI HEAVY INDUSTRIES[2]	Japan	6,905.6	90.6	88	7,490.0	47	705.9	113	19,747	58
48	51	SUMITOMO ELECTRIC INDUSTRIES[2]	Japan	6,878.1	179.2	52	5,737.0	62	2,055.8	51	27,044	32
49	50	MITSUBISHI METAL[2]	Japan	6,698.2[6]	88.2	93	5,508.9	65	810.3	105	11,281	92
50	47	MATSUSHITA ELECTRIC WORKS[5]	Japan	6,656.5	231.5	39	6,011.2	59	2,397.9	46	20,681	55
51	55	FLETCHER CHALLENGE[1]	New Zealand	6,571.7	407.1	23	8,076.1	43	2,237.6	49	37,000	24
52	•	POHANG IRON & STEEL	South Korea	6,538.9	214.3	46	13,125.9	24	6,685.4	10	22,518	46
53	69	NEWS CORP.[1]	Australia	6,453.0	949.5**	5	14,411.7	19	4,692.3	19	30,908	29
54	111	BOND CORP. HOLDINGS[1]	Australia	6,374.7	(795.4)‡	150	8,844.6	36	(87.6)	150	21,000	52
55	56	KOMATSU[2]	Japan	6,349.1	162.4	57	8,503.1	39	3,351.5	31	21,633	49
56	45	ISHIKAWAJIMA-HARIMA HEAVY IND.[2]	Japan	6,290.1	103.3	82	8,550.7	37	1,016.1	93	26,178	36
57	53	NIPPON MINING[2]	Japan	6,250.1[6]	105.6	81	7,048.1	52	1,108.6	85	11,351	91
58	54	TORAY INDUSTRIES[2]	Japan	6,250.0	260.9	31	7,284.5	49	2,630.0	39	26,211	35
59	63	HYUNDAI MOTOR	South Korea	5,845.1	62.1	106	5,502.1	66	1,217.9	76	40,300	22
60	60	RICOH[7]	Japan	5,779.5[6]	138.7	66	5,499.9	67	2,414.2	45	34,400	25
61	62	DAIHATSU MOTOR[2]	Japan	5,715.4	51.0	116	3,593.4	98	833.9	103	18,570	66
62	65	FURUKAWA ELECTRIC[2]	Japan	5,651.1	90.5	89	4,958.2	73	1,127.9	83	15,104	77
63	59	KUBOTA[2]	Japan	5,623.4[6]	143.6	65	6,268.6	57	2,356.2	48	17,500	70
64	68	DAINIPPON INK & CHEMICALS[2]	Japan	5,585.5	56.4	110	5,595.7	64	1,194.2	81	20,122	56
65	64	TAKEDA CHEMICAL[2]	Japan	5,454.0[6]	301.6	26	6,678.0	54	3,382.2	30	13,675	84
66	73	FUJI ELECTRIC[5]	Japan	5,369.1[7]	73.0	98	5,415.4	69	1,024.3	91	19,248	61
67	66	TOYO SEIKAN[2]	Japan	5,242.0	180.4	51	3,900.3	90	1,696.7	60	6,206	130
68	58	FUJI HEAVY INDUSTRIES[2]	Japan	5,188.4	52.3	114	5,492.3	68	2,013.4	52	18,700	65
69	70	KANEBO[2]	Japan	5,035.3[6]	33.5	128	4,761.0	75	131.2	149	25,465	37
70	79	SEKISUI CHEMICAL[2]	Japan	5,034.2	178.4	53	4,263.1	83	1,208.4	79	9,316	105
71	52	KIRIN BREWERY	Japan	4,971.0[6]	220.5	43	8,289.9	41	3,443.3	28	10,478	96
72	67	TONEN[11]	Japan	4,891.0	184.0	50	4,747.0	76	2,455.3	43	4,213	142
73	71	HYOSUNG	South Korea	4,782.4	21.5	140	3,601.5	96	1,021.6	92	24,800	40
74	74	OJI PAPER[2]	Japan	4,708.5	207.3	47	5,046.2	72	1,628.2	62	N.A.	427
75	80	NIPPON MEAT PACKERS[2]	Japan	4,640.1	89.8	91	2,712.5	121	972.1	98	14,836	80

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RANK 1989	1988	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	Rank	ASSETS $ Millions	Rank	STOCK-HOLDERS' EQUITY $ Millions	Rank	EMPLOYEES Number	Rank
76	81	AISIN SEIKI[2]	Japan	4,633.3	92.5	86	3,084.5	112	1,276.5	72	13,568	85
77	77	UBE INDUSTRIES[2]	Japan	4,552.9	151.0	61	6,308.2	56	504.8	126	12,622	88
78	83	KAO[2]	Japan	4,490.4	135.5	67	4,015.1	86	1,761.0	58	12,900	87
79	86	HYUNDAI HEAVY INDUSTRIES	South Korea	4,428.9	94.3	85	5,303.7	70	1,614.5	63	50,000	17
80	75	TEIJIN[2]	Japan	4,424.4	158.1	58	6,263.8	58	1,842.3	54	11,013	94
81	91	OKI ELECTRIC INDUSTRY[2]	Japan	4,365.3[6]	118.8	76	4,391.8	79	1,115.4	84	18,440	67
82	94	HINO MOTORS[2]	Japan	4,203.3[4]	44.1[4]	122	2,115.8[4]	137	678.1[4]	118	8,053[4]	111
83	78	NIPPON SUISAN KAISHA[2]	Japan	4,181.2	21.1	141	2,303.4	133	618.6	122	5,168	134
84	57	SHOWA DENKO	Japan	4,165.5	53.6	113	4,445.1	78	886.4	101	6,246	128
85	93	NIPPON LIGHT METAL[2]	Japan	4,134.1	114.3	78	3,542.7	100	245.3	144	10,700	95
86	85	YAMAHA MOTOR[2]	Japan	4,126.8	49.5	118	3,594.0	97	548.4	125	9,925	101
87	87	AJINOMOTO[2]	Japan	4,110.1	121.6	75	5,282.4	71	2,465.9	42	9,532	104
88	72	CRA	Australia	4,026.7	514.0	16	6,336.5	55	3,186.5	32	21,185	51
89	89	TOYOBO[2]	Japan	3,957.8	55.9	111	3,703.9	95	682.9	116	15,020	79
90	90	JUJO PAPER[2]	Japan	3,935.3[6]	122.9	73	4,308.4	82	982.4	97	6,743	125
91	82	MITSUBISHI OIL[2]	Japan	3,910.0	66.8	101	4,339.4	81	493.6	131	3,340	145
92	76	GOLDSTAR	South Korea	3,863.0	26.7	135	3,465.7	102	756.8	112	33,000	27
93	92	YAMAHA[2]	Japan	3,793.7	28.1‡	133	3,420.2	103	1,092.0	86	17,136	71
94	98	MITSUI TOATSU CHEMICALS[2]	Japan	3,748.6	125.9	70	4,378.7	80	500.5	129	10,400	99
95	118	PACIFIC DUNLOP[1]	Australia	3,719.1	(81.1)‡	149	3,109.2	110	826.2	104	44,753	20
96	97	KONICA[12]	Japan	3,715.6	15.4	144	3,912.8	89	1,300.5	70	21,430	50
97	104	ASAHI BREWERIES	Japan	3,661.5	27.3	134	8,186.1	42	1,777.1	57	6,923	120
98	84	PETRONAS[2,9]	Malaysia	3,533.0	252.6‡	35	8,481.3	40	4,659.5	20	7,562	115
99	113	NISSHIN STEEL[2]	Japan	3,488.3	243.4	38	6,002.2	60	1,214.7	77	8,334	109
100	88	SUMITOMO RUBBER	Japan	3,481.4	48.0	119	3,108.2	111	348.8	141	20,000	57
101	105	SANYO-KOKUSAKU PULP[2]	Japan	3,455.0	83.1	95	3,192.1	108	854.3	102	7,719	114
102	115	TOYODA AUTOMATIC LOOM WORKS[2]	Japan	3,454.8[4]	99.9[4]	83	2,341.2[4]	131	1,173.4[4]	82	6,837[4]	122
103	103	HONSHU PAPER[2]	Japan	3,380.9	29.9	130	3,730.6	94	397.4	137	7,546	116
104	106	SANKYO[2]	Japan	3,376.0	107.9	80	3,065.9	113	1,329.3	69	5,979	131
105	99	PIONEER ELECTRONIC[2]	Japan	3,327.7[3]	144.6[3]	64	2,434.6	130	1,415.4	67	12,919	86
106	112	DAIDO STEEL[2]	Japan	3,258.4	57.1	109	3,057.6	115	794.3	108	10,445	97
107	95	TDK[2]	Japan	3,252.9[3]	164.8[3]	56	3,767.3	93	2,153.3	50	19,361	60
108	100	MITSUBISHI PETROCHEMICAL[2]	Japan	3,209.1[3]	203.8[3]	48	4,057.2	85	983.8	96	3,770	143
109	117	ITOHAM FOODS[2]	Japan	3,198.2[3]	53.9[3]	112	1,690.1	143	783.2	109	6,746	124
110	102	SHISEIDO[2]	Japan	3,190.5[3]	81.5[3]	97	3,954.7	87	1,865.6	53	19,000	64
111	133	SHIN-ETSU CHEMICAL[2]	Japan	3,183.3	216.3	44	3,528.5	101	1,244.9	74	10,419	98
112	109	MEIJI MILK PRODUCTS[2]	Japan	3,145.7	24.2	137	1,313.2	147	393.7	139	7,500	117
113	96	YAMAZAKI BAKING	Japan	3,125.0[6]	71.6	99	1,859.1	140	954.3	99	16,410	75
114	116	ONODA CEMENT[2]	Japan	3,089.4	90.5	90	3,871.5	92	699.0	114	6,890	121
115	110	TOYO SASH[2]	Japan	3,040.2[3]	165.9[3]	55	3,050.6	116	1,267.5	73	8,588	107
116	107	HONAM OIL REFINERY	South Korea	3,029.9	39.5	126	1,913.1	139	385.1	140	2,048	146
117	143	BORAL[1]	Australia	2,975.4	252.1	36	2,573.1	125	1,214.6	78	25,000	38
118	114	ALPS ELECTRIC[2]	Japan	2,955.2	42.0	124	2,917.4	117	993.0	95	14,157	83
119	127	OMRON[2,13]	Japan	2,903.3	147.8[*6]	62	2,752.0	120	1,367.0	68	15,047	78
120	140	SUMITOMO HEAVY INDUSTRIES[2]	Japan	2,897.0	32.7	129	3,574.9	99	500.7	128	10,000	100
121	129	DAISHOWA PAPER[2]	Japan	2,857.5	62.6	105	4,930.7	74	446.3	133	7,741	113
122	121	NISSHIN FLOUR MILLING[2]	Japan	2,841.9	59.7	108	1,559.6	144	642.5	120	4,345	141
123	149	CSR[2]	Australia	2,827.8	250.5	37	4,132.8	84	1,822.4	55	18,266	68
124	108	NISSAN SHATAI[2]	Japan	2,789.5[4]	17.1[4]	143	1,065.8[4]	148	459.9[4]	132	5,078[4]	139
125	132	KYOCERA[2]	Japan	2,724.9	230.6	40	3,927.7	88	2,744.0	38	19,192	62

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RANK 1989	RANK 1988	COMPANY	COUNTRY	SALES $ Millions	PROFITS $ Millions	PROFITS Rank	ASSETS $ Millions	ASSETS Rank	STOCKHOLDERS' EQUITY $ Millions	STOCKHOLDERS' EQUITY Rank	EMPLOYEES Number	EMPLOYEES Rank
126	131	MITSUBISHI MINING & CEMENT[2]	Japan	2,702.2	38.7	127	3,276.8	107	568.5	124	6,459	127
127	119	YOKOHAMA RUBBER	Japan	2,628.0	64.3	104	2,695.0	122	397.1	138	11,073	93
128	124	KANTO AUTO WORKS[2]	Japan	2,617.5[4]	24.6[4]	136	782.8[4]	150	203.5[4]	147	5,877[4]	132
129	123	MORINAGA MILK INDUSTRY[2]	Japan	2,616.0	29.8	131	1,378.5	146	418.8	134	4,930	140
130	122	UNITIKA[2]	Japan	2,608.2	28.7	132	2,468.9	126	206.0	146	6,208	129
131	146	DOOSAN	South Korea	2,568.6	23.7	139	2,632.7	124	617.4	123	16,540	74
132	134	NIPPON SEIKO[2]	Japan	2,548.9[3]	86.1[3]	94	3,309.2	106	1,552.6	65	11,941	90
133	•	GOODMAN FIELDER WATTIE[1]	Australia	2,544.8	258.7[**]	32	3,134.3	109	1,044.9	90	25,000	39
134	•	NISSAN DIESEL MOTOR[2]	Japan	2,544.7	14.7	146	2,463.0	127	401.3	136	5,105	138
135	120	PIONEER INTERNATIONAL[1]	Australia	2,528.5	125.4[‡]	71	2,652.9	123	1,081.7	89	9,897	102
136	126	MITSUI MINING & SMELTING[2]	Japan	2,479.0	44.5	121	2,755.5	119	181.0	148	6,614	126
137	138	TOYOTA AUTO BODY[2]	Japan	2,477.7[4]	20.8[4]	142	868.6[4]	149	235.3[4]	145	7,124[4]	118
138	128	TOTO[2]	Japan	2,471.6[3,4]	126.5[3,4]	69	2,132.7[4]	136	1,012.3[4]	94	9,136[4]	106
139	101	GENERAL SEKIYU[2]	Japan	2,455.2	64.3	103	2,246.3	134	679.8	117	N.A.	462
140	•	DAIKIN INDUSTRIES[2]	Japan	2,411.1	88.7	92	1,819.9	142	693.6	115	8,300	110
141	137	MINOLTA CAMERA[2]	Japan	2,406.6	15.2	145	2,453.5	129	796.0	106	17,000	72
142	142	KURARAY[2]	Japan	2,401.5	41.0	125	2,461.9	128	403.9	135	6,800	123
143	148	MITSUI PETROCHEMICAL INDUSTRIES[2]	Japan	2,382.7	128.6	68	3,353.1	105	779.6	110	5,144	136
144	147	CITIZEN WATCH[2]	Japan	2,344.5	65.2	102	2,187.2	135	904.8	100	16,673	73
145	141	MITSUBISHI RAYON[2]	Japan	2,342.3	43.1	123	2,798.4	118	795.1	107	7,069	119
146	139	MEIJI SEIKA[2]	Japan	2,312.3	24.1	138	1,521.7	145	763.9	111	5,160	135
147	144	SHIONOGI[2]	Japan	2,310.3	91.3	87	2,315.7	132	1,219.2	75	8,454	108
148	125	LION	Japan	2,288.9	14.4	147	1,820.1	141	641.4	121	5,133	137
149	•	NINTENDO[14]	Japan	2,253.5	257.9	33	1,930.0	138	1,087.5	87	1,207	147
150	•	YOSHIDA KOGYO[2]	Japan	2,226.1	112.2	79	3,873.3	91	1,195.9	80	15,880	76
		TOTALS		1,132,533.9	33,075.6		1,176,856.1		357,026.2		3,917,526	

Change in Sales

10 biggest increases

	Sales rank	1988-89
BOND CORP. HOLDINGS	54	131.2%
SONY	14	64.6
GOODMAN FIELDER WATTIE	133	61.9
CSR	123	48.5
NEWS CORP.	53	47.2
BORAL	117	47.1
NINTENDO	149	45.9
PACIFIC DUNLOP	95	42.7
KAWASAKI HEAVY INDUSTRIES	47	42.0
SUMITOMO HEAVY INDUSTRIES	120	40.4

5 biggest decreases

GENERAL SEKIYU	139	19.6%
SHOWA DENKO	84	16.1
KIRIN BREWERY	71	10.4
CRA	88	3.3
PETRONAS	98	2.8

Change in Profits†

10 biggest increases

	Sales rank	1988-89
TAIYO FISHERY	34	6208.7%
ISHIKAWAJIMA-HARIMA HEAVY IND.	56	2642.6
SUMITOMO METAL INDUSTRIES	28	2078.3
SUMITOMO HEAVY INDUSTRIES	120	926.4
NISSAN DIESEL MOTOR	134	615.9
KAWASAKI STEEL	31	501.1
NKK	20	483.7
KOBE STEEL	25	468.8
OKI ELECTRIC INDUSTRY	81	372.8
NIPPON LIGHT METAL	85	288.9

5 biggest decreases

BRIDGESTONE	18	78.0%
PETRONAS	98	71.5
SHOWA DENKO	84	62.5
YAMAHA	93	53.1
SHOWA SHELL SEKIYU	35	46.1

†Listings exclude companies that lost money in 1988.

Footnotes to the industrials

1 Figures are for fiscal year ended June 30, 1989.
2 Figures are for fiscal year ended March 31, 1989.
3 Figure is a FORTUNE estimate.
4 Figures are unconsolidated.
5 Figures are for fiscal year ended November 30, 1989.
6 Excludes some some subsidiaries more than 50% owned.
7 Figures are for fiscal year ended October 31, 1989.
8 Figures are for fiscal year ended May 31, 1989.
9 Government-owned.
10 Figures are for fiscal year ended October 20, 1989.
11 Name changed from Toa Nenryo Kogyo KK.
12 Figures are for fiscal year ended April 20, 1989.
13 Name changed from Omron Tateisi Electronics.
14 Figures are for fiscal year ended August 31, 1989.

Notes to the Pacific Rim Industrial Companies

Sales

All companies on the list must have derived more than 50% of their sales from manufacturing and/or mining. Sales do not include excise taxes or customs duties levied according to either volume or value sales, and so the figures for some companies—most of which sell gasoline, liquor, or tobacco—may be lower than those published by the companies themselves. Unless otherwise noted, figures exclude intracompany transactions and include consolidated subsidiaries more than 50% owned, either fully or on a prorated basis. Figures have been converted to dollars using an exchange rate that consists of the official average rate during each company's fiscal year (ended December 31, 1989, unless otherwise noted).

Profits

Profits are shown after taxes, minority interests, and extraordinary items. Figures have been converted to dollars using an exchange rate that consists of the official average rate during each company's fiscal year (ended December 31, 1989, unless otherwise noted).

Assets

Totals shown at each company's year-end. Figures have been converted to dollars at the official exchange rate at each company's year-end.

Stockholders' equity

Stockholders' equity is shown at each company's year-end. Minority interest is not included. Figures have been converted to dollars at the official exchange rate at each company's year-end.

Employees

The figure shown is either a year-end or yearly average number as published.

The Industrials by Country

	1-50	51-100	101-150	Total	Largest company	1989 sales in millions	Rank
AUSTRALIA	2	4	4	10	ELDERS IXL	$10,338.7	22
JAPAN	43	39	44	126	TOYOTA MOTOR	$60,443.6	1
MALAYSIA	0	1	0	1	PETRONAS	$3,533.0	98
NEW ZEALAND	0	1	0	1	FLETCHER CHALLENGE	$6,571.7	51
SOUTH KOREA	4	5	2	11	SAMSUNG	$35,189.1	5
TAIWAN	1	0	0	1	CHINESE PETROLEUM	$8,008.2	37

Index to the Companies

	Sales rank		Sales rank		Sales rank		Sales rank
AISIN SEIKI	76	HONDA MOTOR	7	MITSUBISHI RAYON	145	SHIN-ETSU CHEMICAL	111
AJINOMOTO	87	HONSHU PAPER	103	MITSUI MINING & SMELTING	136	SHIONOGI	147
ALPS ELECTRIC	118	HYOSUNG	73	MITSUI PETROCHEMICAL IND.	143	SHISEIDO	110
ASAHI BREWERIES	97	HYUNDAI HEAVY INDUSTRIES	79	MITSUI TOATSU CHEMICALS	94	SHOWA DENKO	84
ASAHI CHEMICAL INDUSTRY	38	HYUNDAI MOTOR	59	MORINAGA MILK INDUSTRY	129	SHOWA SHELL SEKIYU	35
ASAHI GLASS	36	IDEMITSU KOSAN	19	NEC	8	SNOW BRAND MILK PRODUCTS	45
BOND CORP. HOLDINGS	54	ISHIKAWAJIMA-HARIMA HEAVY IND.	56	NEWS CORP.	53	SONY	14
BORAL	117	ISUZU MOTORS	26	NINTENDO	149	SSANGYONG	41
BRIDGESTONE	18	ITOHAM FOODS	109	NIPPONDENSO	27	SUMITOMO HEAVY INDUSTRIES	120
BROKEN HILL PROPRIETARY	30	JAPAN TOBACCO	40	NIPPON LIGHT METAL	85	SUMITOMO METAL INDUSTRIES	28
CANON	23	JUJO PAPER	90	NIPPON MEAT PACKERS	75	SUMITOMO ELECTRIC INDUSTRIES	48
CHINESE PETROLEUM	37	KANEBO	69	NIPPON MINING	57	SUMITOMO CHEMICAL	46
CITIZEN WATCH	144	KANTO AUTO WORKS	128	NIPPON OIL	17	SUMITOMO RUBBER	100
COSMO OIL	29	KAO	78	NIPPON SEIKO	132	SUNKYONG	32
CRA	88	KAWASAKI HEAVY INDUSTRIES	47	NIPPON SUISAN KAISHA	83	SUZUKI MOTOR	42
CSR	123	KAWASAKI STEEL	31	NIPPON STEEL	10	TAIYO FISHERY	34
DAEWOO	11	KIRIN BREWERY	71	NISSAN DIESEL MOTOR	134	TAKEDA CHEMICAL	65
DAIDO STEEL	106	KOBE STEEL	25	NISSAN MOTOR	4	TDK	107
DAIHATSU MOTOR	61	KOMATSU	55	NISSAN SHATAI	124	TEIJIN	80
DAIKIN INDUSTRIES	140	KONICA	96	NISSHIN FLOUR MILLING	122	TONEN	72
DAINIPPON INK & CHEMICALS	64	KUBOTA	63	NISSHIN STEEL	99	TOPPAN PRINTING	44
DAI NIPPON PRINTING	39	KURARAY	142	NKK	20	TORAY INDUSTRIES	58
DAISHOWA PAPER MFG.	121	KYOCERA	125	OJI PAPER	74	TOSHIBA	6
DOOSAN	131	LION	148	OKI ELECTRIC INDUSTRY	81	TOTO	138
ELDERS IXL	22	MATSUSHITA ELECTRIC INDUSTRIAL	3	OMRON	119	TOYOBO	89
FLETCHER CHALLENGE	51	MATSUSHITA ELECTRIC WORKS	50	ONODA CEMENT	114	TOYODA AUTOMATIC LOOM WORKS	102
FUJI ELECTRIC	66	MAZDA MOTOR	15	PACIFIC DUNLOP	95	TOYO SASH	115
FUJI HEAVY INDUSTRIES	68	MEIJI MILK PRODUCTS	112	PETRONAS	98	TOYO SEIKAN	67
FUJI PHOTO FILM	43	MEIJI SEIKA	146	PIONEER ELECTRONIC	105	TOYOTA AUTO BODY	137
FUJITSU	12	MINOLTA CAMERA	141	PIONEER INTERNATIONAL	135	TOYOTA MOTOR	1
FURUKAWA ELECTRIC	62	MITSUBISHI ELECTRIC	9	POHANG IRON & STEEL	52	UBE INDUSTRIES	77
GENERAL SEKIYU	139	MITSUBISHI HEAVY INDUSTRIES	16	RICOH	60	UNITIKA	130
GOLDSTAR	92	MITSUBISHI KASEI	33	SAMSUNG	5	YAMAHA	93
GOODMAN FIELDER WATTIE	133	MITSUBISHI METAL	49	SANKYO	104	YAMAHA MOTOR	86
HINO MOTORS	82	MITSUBISHI MINING & CEMENT	126	SANYO ELECTRIC	21	YAMAZAKI BAKING	113
HITACHI	2	MITSUBISHI MOTORS	13	SANYO-KOKUSAKU PULP	101	YOKOHAMA RUBBER	127
HONAM OIL REFINERY	116	MITSUBISHI OIL	91	SEKISUI CHEMICAL	70	YOSHIDA KOGYO	150
HONDA MOTOR	7	MITSUBISHI PETROCHEMICAL	108	SHARP	24		

■CEOs SEE RECESSION SOON • HOW SAFE ARE AIRLINES? • FDIC IMPERILED■

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FORTUNE

AMERICA'S HOT YOUNG SCIENTISTS

These men and women give the U.S. an edge in the race for global advantage

Top astronomer Alan Dressler peers into the origins of the cosmos.

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FORTUNE

ABOVE: Physicist Mark Reed of Yale University, photographed by Louis Psihoyos (Matrix).

COVER: Psihoyos also shot this picture of astronomer Alan Dressler.

"Most people are awed by the size of the universe and our being so small. My view is completely opposite. The mind is the most complex thing we know of." PAGE 56

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Let FORTUNE introduce you to 12 brilliant thinkers who have achieved important breakthroughs—from Susan Solomon, who is solving the riddle of the ozone hole, to Donald Eigler, the man who moves atoms. American science still sets the pace, and U.S. investment in research and development is paying spectacular dividends. *by Gene Bylinsky*

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Some American industries are growing with surprising vigor. *by Joseph Spiers*

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"The convertibility of the ruble is my highest priority."

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"The economy is like the stock market. The longer you go without a correction, the bigger the blowout when it comes."

PAGE 73

"If maintenance gets as intolerable as it has at Eastern, [the airline industry] can expect criminal charges."

PAGE 85

"He's an honest-to-God 19th-century businessman, unencumbered by ideology."

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"We don't see failures sufficient to imperil our fund. But that obviously depends on the economic environment."

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"The competitive arena has been more intense than anyone could have imagined."

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EDITOR'S DESK

Left: cover story reporter Moore, editor Petre, writer Bylinsky. Top: picture researcher Green and designer Hoffman. Bottom: photographer Psihoyos with a Chinese finger puzzle used to explain a scientist's discovery.

AMERICA'S scientists are among its greatest competitive strengths. This issue's cover story introduces a new generation—12 young researchers who have made important breakthroughs in fields from computer languages to robotics to molecular biology. Their work will change our lives, and perhaps lead to some entirely new industries. The story follows in the steps of one we published in June 1954, when we identified 20 promising young scientists. Five later won Nobel Prizes.

Chances are some of these will too. The 12 were chosen from more than 100 candidates by Gene Bylinsky, a member of our board of editors, and associate editor Alicia Moore. Bylinsky, who has won 17 awards since 1966 for his scientific reporting at FORTUNE, knows how to pick winners early. He spotted major advances like the integrated circuit well before the rest of the press. Moore, a biologist by education, specializes in science and technology reporting, as does Peter Petre, who edited the story.

RICHARD A. WHITMORE

Louis Psihoyos's photographs spectacularly augment Bylinsky's text. Seeking more than conventional portraits, he used a technique that is a standard tool in science fiction movies but rarely employed in still photography. It is called front-screen projection, and it involves shooting through a large glass screen to show the scientist surrounded by computer models or photographs of the project on which he or she is working. It also takes effort: Psihoyos traveled for three weeks with more than 800 pounds of equipment in 18 bags.

He found the scientists significantly less vain than his usual portrait subjects: "Most businessmen say things like 'Don't get my paunch,' but these people said things like 'I'm blocking an ion there, can you put me over in this part of the picture?' They were more interested in their work than their hair."

The story itself was technically innovative for us—the first big article designed entirely on our new computerized layout system. Associate art director Joan Hoffman operated the computer; picture researcher Chris Green edited Psihoyos's images. They work together often on technology stories. Three years ago they formalized the collaboration—by getting married.

Marshall Loeb
MANAGING EDITOR

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THE BOSSES SEE A RECESSION SOON

Sharply reversing earlier views, America's leading chief executives overwhelmingly believe an economic downturn is here or imminent. They're not so bearish on stocks. ■ *by Jaclyn Fierman*

IF THINKING makes it so, then the phantom recession of 1990 could well turn into the real thing. "No question about it," says James Dresher, CEO of air-conditioning manufacturer York International Corp. "Anyone who doesn't think we're in a recession isn't facing reality." But by FORTUNE's numbers-based reality test, the U.S. is *not* in a recession. Nor, according to this magazine's economic forecast, will it be in the coming year (see Fortune Forecast). But chief executives seem convinced otherwise. As Western Publishing Group s Richard Bernstein sees it, recession is not a question of numbers but "a state of mind."

Q A Because of recession concerns, has your company . . .

	Yes	No	Not sure/ doesn't apply
Cut capital spending?	30%	65%	5%
Reduced its work force?	30%	66%	4%
Cut inventories?	26%	52%	22%
Reduced orders to suppliers?	24%	58%	18%
Done any of the above?	47%	—	—

The latest FORTUNE 500 CEO Poll found that 71% of respondents believe the nation is in a recession or will be in the next 12 months. Surprisingly, their predictions for the stock market are considerably less gloomy: On the theory that the market has already absorbed the idea of a short-lived recession, half expect the Dow to be somewhere between 2500 and 3000 a year from now; most of the rest predict it will be between 2000 and 2500, with a few seeing it above 3000. The independent opinion research firm Clark Martire & Bartolomeo spoke by telephone with 221 chief executives of FORTUNE 500 and Service 500 companies between August 29 and September 6.

REPORTER ASSOCIATE *Alicia Hills Moore*

Just a year ago corporate chieftains had a much more cheerful take on things. When polled last September, only 38% of CEOs said they anticipated a recession in the next 12 months. In January 1989 a mere 16% saw recession in the offing.

It isn't hard to understand why so many chief executives have changed their minds. No one disputes that the economy has slowed considerably in the past year or so. Inevitably some companies do better than the average while others do worse, and overall growth of real GNP is now so tepid—only about 1.5% a year—that some of the laggards may be contracting. In addition, eight years of economic expansion may have lowered executives' tolerance for the odd reversal. A marked slowdown, even if it does not exterminate growth, may seem a lot more alarming today than it would have a decade ago.

The new tune—make that dirge—of CEOs varies in pitch depending on where they live and what trade they ply. Among the most dispirited is William O'Brien, head of Hanover Insurance Co. in Worcester, Massachusetts. "I make my judgment on what I see in New England, not on what I read in the paper," he says. "The contraction of credit is enormous. And banks are asking for a hell of a lot more collateral on loans. We are in a recession here."

Surveying the economy from the deck of American President Cos., which makes shipping containers, CEO Bruce Seaton is only slightly less downcast than O'Brien. "Economists wouldn't agree with me, but from my vantage point we're in a mild recession," he says. "Consumption is off and our trade is off. There is a reduction of cargo flow from Asia to North America.

"In light of the economy, we're trying to reduce costs and increase our productivity. So we're investing in more efficient plants and equipment."

RICHARD BERNSTEIN
Western Publishing

We've been seeing it since last year."

Back in the heartland, in Muscatine, Iowa, Hon Industries' Stanley Howe speaks for the more sanguine minority: "I have trouble saying we're in a recession. Our state income tax collections are exceeding expectations. The Rust Belt has been unfairly maligned." As testimony to his opti-

Q A **Is the U.S. economy in recession or will one begin in the coming 12 months?**

Answered **Yes** in...

1990	Sept.	71%
1989	Sept.	38%
	Jan.	16%
1987	Nov.	17%
	Sept.	13%

☑ San Francisco Earthquake

☑ Hurricane Hugo

☑ USSR Gas Explosion

☑ Armenian Earthquake

☑ Hurricane Gilbert

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mism. Howe has ordered up four new plants for his office furniture business.

While most CEOs surveyed are in the grip of recession psychology, not all of these have started to manage accordingly. Just 30% have lowered capital spending, and about the same percentage have laid off employees. Even fewer, 26%, have shed inventory, and only 24% have cut down on orders to suppliers. Nonetheless, nearly half have taken at least one of these steps, actions that in the aggregate could increase the chance of recession.

"It's an absurdity to think that as a country we can live off borrowed money."

JOHN BRYAN
Sara Lee

John Bryan of Sara Lee Corp. this year will cut projected capital spending by 15%, or $100 million, though he has not bought into the recession scenario. "We're not there yet, but we're coming in for a landing, and I don't know how rough it will be," he says. "We're trying to prepare by paying more attention to cash flow, not just reported earnings." Dresher of York International has also begun to manage defensively. Believing a recession has already begun, he says that if it continues he'll cut inventories by as much as $40 million. And Forrest F. Stacy, CEO of Oglethorpe Power Corp. in Georgia, is nipping costs wherever possible. Example: He is trying to extend the life of company cars by more dutiful maintenance.

Q A Has "recession talk" played a role in determining companies' business plans?

Yes	87%
No	9%
Not Sure	4%

Chief executives who are not cutting back offer astute—if sometimes counterintuitive—explanations. John Woodhouse, CEO of Sysco Corp., a food distributor and marketer in Houston, says his company will probably *increase* capital spending over last year, even though he says there might well be a recession sometime in the next 12 months. "If you don't spend when times are still good," he says, "you may not be able to build up capacity again when you are trying to emerge from a recession."

Similarly, Western Publishing's Bernstein has raised capital spending to a new record this year despite his belief that a recession has already overtaken the commercial printing business. He explains, "In light of the economy, we're trying to reduce costs and increase our productivity. So we're investing in more efficient plants and equipment."

Regardless of how they're managing, most CEOs have definite ideas about how Washington could help keep the country out of recession. Fully 67% are singing the budget blues, calling for the government to narrow the deficit one way or another. In the near term, of course, that may not make much sense as an antirecession measure. Reducing the deficit probably means

"We've got a bunch of gluttons here. If it's not Saddam Hussein we're dealing with, it will be someone else."

WINSTON WALLIN
Medtronic

Q A

Where do you expect the Dow Jones industrial average to be in a year?

	Answered **Sept. 1990**	Answered **Sept. 1989**	Answered **Nov. 1987**
Over 3000	8%	0	0
2500-2999	50%	47%	7%
2000-2499	35%	44%	53%
1500-1999	3%	0	38%
Below 1500	0	6%	1%
Not sure	4%	3%	1%

raising taxes or cutting spending or both, and any combination would diminish the federal government's fiscal stimulus to the economy, slowing it even further. Some economists argue that cutting the capital gains tax, as President Bush advocates, would yield benefits without the bite, increasing tax revenues while spurring the economy. But enacting such a change will be politically tough, and at least some of the CEOs aren't thinking of it anyway. "Reduce spending," insists Geico's William Snyder. "When we're in a recession, reduce spending. When we're in an expansion, reduce spending. When we're level, reduce spending."

Easing the money supply is the rallying cry of 63%. Bernstein speaks for many: "Cutting interest rates would send a psychological message that the government is concerned and is doing something. That would make people feel better, and when they feel good, they spend."

Other quick fixes chief executives would like to see: an end to the crisis in the Middle East and an oil tax. Winston Wallin, CEO of Medtronic Inc., a medical equipment manufacturer in Minneapolis, believes that a "hefty" tax on gasoline and oil would ease U.S. dependence on foreign energy supplies and encourage the development of alternative sources. "We've got a bunch of gluttons here," he says. "If it's not Saddam Hussein we're dealing with, it will be someone else."

SHHHHH! That was the most poignant plea of the chief executives surveyed. If everyone, especially the media, would please be quiet and stop the incessant recession chatter, perhaps the economy would start to improve—or at least stay out of quicksand. "If we cry wolf on recession, we'll have one," says Jack Twyman, CEO of Super Foods Services Inc. in Ohio. "The food business is one of the last to be affected in a recession. But I'm concerned about all the rhetoric and the prophets of doom. We can talk ourselves into a recession."

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As though recession were our penance, some CEOs argue we should do nothing to forestall one. Among them is Jerry Pearlman of Zenith Electronics. "We must get the deficit under control," he says. "If reducing it means higher taxes and cutting spending and some recession, this may be the price we have to pay for living without restraints for so long."

Others maintain that even attempting to stop a recession would be futile: What goes up must come down, they say, and down the economy is coming. "When you fly so high, borrowing and fooling yourself as we did through the Eighties in the personal, corporate, and federal sectors, you have to expect to come down to the ground," says Sara Lee's Bryan. "For eight years we have lived well in this country but way above our means. Housing and art are outrageously inflated, and our standard of living is supported by enormous debt. It's an absurdity to think that as a country we can live off borrowed money."

A few executives, viewing recession as inevitable, would just as soon grit their teeth and be done with it. That's the view of Marion Sandler, president and CEO of Oakland's Golden West Financial Corp., one of the few bright spots in the savings and loan industry. "The economy is like the stock market," she says. "The longer you go without a correction, the bigger the blowout when it comes. We've had an eight-year expansion without a meaningful adjustment. That can't continue. Let's shake it out and get it over with." She expects a recession within a year and already sees the demand for money drying up. F

Q What one or two things should the federal government be doing to keep the nation out of recession?

A

Deal with the federal deficit/ balance the budget/reduce government spending	67%
Lower interest rates/ease the money supply	63%
Avoid new taxes	10%
Solve the Iraq problem	7%
Impose an oil tax	5%
Reduce government interference with business	4%
Encourage more research and development	1%

"We've had an eight-year expansion without a meaningful adjustment. That can't continue. Let's shake it out and get it over with."

MARION SANDLER
Golden West Financial

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WILL THE FDIC RUN OUT OF MONEY?

There's a good chance that it will. But by taking the right steps now, Washington can ensure that banks won't cost taxpayers anything like what the S&Ls have. ■ *by Brett Duval Fromson*

IS AN S&L-SIZE DISASTER brewing among America's commercial banks? With banks already failing at the highest rate since the Great Depression, both the Congressional Budget Office and the General Accounting Office have recently issued dire predictions. If the economy slows further, they say, a key line of defense—the Federal Deposit Insurance Corp., whose $13.2 billion insurance fund pays depositors when banks fail—could quickly run out of money. Says Dan Brumbaugh, a former research scholar at Stanford University, one of the few experts to predict the S&L debacle: "Make no mistake about it. We are in the incipient stages of the next crisis."

So far, however, the warning lights are flashing only yellow. Banking's worst problems are concentrated in ten states (see map on following page). Compared with the thrifts, banks have far more capital, a much more solid earnings base, and considerably better management. If the U.S. avoids a recession and if policymakers learn the right lessons from the S&L mess—admittedly no small assumptions—the tab that's ultimately handed to taxpayers because of bank failures could be held to a small fraction of the $150 billion thrift bailout bill.

No one denies that the industry faces hard times. "The U.S. banking system is under stress," says FDIC Chairman William Seidman. Three hundred fifty-four banks have reported annual losses every consecutive year since 1986. Among big money center banks, profits are so poor that some have been eating into capital just to cover dividend payments. Write-offs as a percent of

FDIC Chairman William Seidman, who often rides a bike to his office near the White House, looks considerably more fit than his insurance fund.

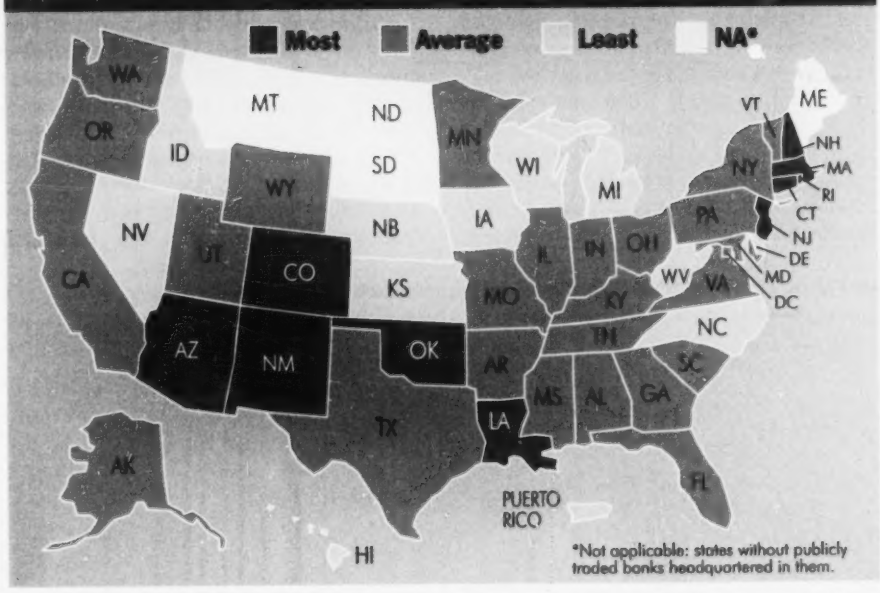
CHARLES ARCHAMBAULT

loans have risen from 0.84% four years ago to 1.16%—worrisome by historical standards. As for liquidity, banks depend more than ever on brokered deposits—an expensive and fickle source of funds, gathered together by stockbrokers and shunted off to whoever pays the highest yields. (Many now-defunct S&Ls were into the same game.)

The unhappy result: Since 1987, U.S. banks have been failing at the rate of 200 per year, vs. just ten a year in 1980. To make depositors whole, the FDIC's insurance fund shrunk by $5.1 billion in 1988 and 1989. In July, three months after saying that the FDIC would *not* lose money a third straight year, Chairman Seidman was forced to acknowledge that the agency would be out another $2 billion in 1990. Since then 20 more banks have gone bust, notably the National Bank of Washington, whose failure could by itself cost the FDIC more than $500 million.

WHICH STATES' BANKS ARE MOST TROUBLED

Based on the ratio of nonperforming loans to total assets of publicly traded banks headquartered in each state.



SOURCE: SNL SECURITIES

SMALL WONDER that in the last year the average price of the 50 largest publicly traded commercial banks has dropped more than 40%. Frets James Sidell, president of UST Corp., holding company for a profitable and well-capitalized New England bank: "This industry has one foot on a banana peel and the other in the grave." Recently Carole Berger, a respected analyst at the brokerage C.J. Lawrence, issued a report on high-risk lending at those same banks, with this headline: THE PLAGUE SPREADS. ANALYSTS FEAR EPIDEMIC.

Bubonic banking has been incubating for more than a decade. It intensified in 1980, when the government removed longstanding ceilings on the interest rates banks and thrifts could pay depositors. With the demise of Regulation Q, as it was known, these institutions' cost of money soared as they were forced to bid for deposits against newly arrived money market funds.

That change, in turn, spawned what Marc Perkins, chairman of the Tampa investment bank Perkins Smith Inc., calls "the compulsion to lend" among bankers. Says Perkins: "The way it used to work was that toward the end of a credit cycle, the wise old bank president would go downstairs to his loan department and say, 'Fellas, don't make any more loans. Just buy T-bills, and instead of earning 4%, we will earn 2%.' But after Reg Q went the way of the dodo bird, the loan officer told the bank president, 'We can't do that because the yield on T-bills is below what we're paying for deposits.' So the president says, 'Well, forget I was here. You better keep making loans.' "

Other ailments with fancy-sounding labels fueled this compulsion by infecting earnings. "Disintermediation"—epitomized by the shift among big corporate borrowers from bank loans to the commercial paper market—began in the 1970s. But it exploded in the 1980s. So did "securitization"—the packaging and sale, mainly by investment banks, of loans that were once the exclusive preserve of banks, such as mortgages, car loans, and credit card receivables. While banks could still originate these loans, securitization eliminated profits gained from holding them and earning interest over many years.

WITH THEIR EARNINGS declining, banks have responded much as the S&Ls did, by making riskier loans for which they can collect higher fees and interest. In particular they have poured money into commercial real estate and highly leveraged companies. Last year for the first time *ever* in the U.S., real estate loans alone exceeded the banks' commercial and industrial lending. Unfortunately, what bankers are also discovering—just as they did in the early 1980s after their disastrous lending spree in the Third World—is that in an economic downturn, such loans go bad far more quickly and in far greater numbers than the more conventional variety.

So far banking's woes haven't directly cost U.S. taxpayers a penny. The money that flows into the insurance fund comes from premiums paid by the 13,000 FDIC member banks. Despite the warnings from the General Accounting Office and the Congressional Budget Office, Seidman of the FDIC believes that can continue. "We don't see failures sufficient to imperil our fund," he says. "But that obviously depends on the economic environment." And what is Seidman's best guess about that environment? "We're assuming that it remains about what it is now."

That's also still FORTUNE's assumption (see Fortune Forecast). But to find out what might happen if the economy worsens we enlisted the help of Ferguson & Co., a well-regarded bank consulting firm in Washington, D.C. It built a model that predicts how much equity capital U.S. banks are likely to lose under two scenarios—one in which the economy merely slows further from its current sluggish pace and another in which the U.S. slides into a severe recession. The results suggest that the folks at the GAO and CBO are right to worry.

Ferguson's model assigns a set of values to four key factors that reduce bank capital. For example, in the "slowdown" scenario, it assumes 30% of loans already on banks' books as nonperforming loans would go uncollected, whereas in the "recession" case, it as-

REPORTER ASSOCIATES *Jessica Skelly von Brachel, John Labate, and Jennifer Reese*

sumes 50% must be written off. Such losses are then partly offset by the banks' compensating earnings power and various accounting complexities, such as the tax credits generated by the losses. In the less dire scenario Ferguson assumes that the average bank earns a return equal to 0.75% of its assets, while the severe scenario lowers that return to 0.50%. All these assumptions are drawn from close analysis of earlier banking disasters.

Other banking experts consulted by FORTUNE agree that as a stress test, Ferguson's model is reasonable. It is also conservatively based on the most recent publicly available FDIC data. Because these date back to March 31, they understate the recent deterioration in many banks' real estate loan portfolios, particularly in hard-hit regions such as New England.

So what's the potential damage? Under the slowdown scenario, the entire U.S. banking system suffers a net loss of some $19.5 billion in equity capital. David Cates, Ferguson's chairman and the model's creator, figures that would translate into a $5 billion hit to the FDIC's insurance fund. A loss that big, in turn, would give rise to further trouble. "Once the fund slips into single digits [below $10 billion]," says Cates, "it risks becoming effectively insolvent. That's because as it dwindles, big uninsured depositors [the FDIC only insures accounts up to $100,000] will become alarmed and move their money from weaker banks into either strong banks or T-bills." Such a flight from weak banks could trigger failures and a corresponding drain on the fund. To forestall such a run, Cates estimates that taxpayers might be asked to pony up $5 billion to replenish the FDIC's coffers.

In the recession scenario, the banks' equity capital shrinks by $86.3 billion—a far more worrisome 41% cut in the system's capital cushion. But healthy banks would absorb part of the capital loss, Cates figures, and the FDIC could tap them for higher premiums. Taxpayers, he calculates, would be left facing a maximum bill of $40 billion.

That's some $100 billion less than even the most conservative estimates of the potential cost of the S&L bailout—good news if you're the type who insists on always looking at the half-full side of the glass. There's also comfort, though of a distinctly chilly sort, in Cates's finding that most big banks with the heaviest exposure to high-risk loans would survive a really nasty recession (see box).

STILL, A POTENTIAL taxpayer liability of $40 billion is hardly chicken feed. And compared with the thrifts, banks play a far more critical role in the economy. That's why it's essential that legislators and regulators shore up their safety and soundness with greater skill and alacrity than they have displayed in the S&L debacle.

At the moment Congress is eagerly awaiting a Treasury Department study on bank reform that's meant to provide a foundation for new legislation from the Bush Administration. But that study is not due until December. In the meantime, here are FORTUNE's reform proposals, drawn from extensive interviews with industry experts:

■ **Intervene earlier.** Banking regulators lack the kind of clearly defined early warning policy that the SEC uses to police Wall Street. As a result they often step in *after* banks are too far gone to save. Lowell Bryan, the top banking consultant at McKinsey & Co., would like the government to draw up a well-defined system of green, yellow, and red light signals that could help both banks and regulators determine when an institution is veering off course.

Here's an example. Richard Randall, a vice president of the Federal Reserve Bank of Boston, points out that as early as 1986, some medium-size New England banks had made loans to builders that amounted to more than 20% of their entire portfolios. In one extreme case, a bank's construction loans amounted to 70% of total loans—a clear signal to call in the cops.

■ **Improve bank accounting.** Today banks mask the true health of their balance sheets in a number of ways. For one thing, they can carry loans on their balance sheets at historical value—even if their value later deteriorates. This practice creates a huge incentive

HOW TOUGH TIMES COULD HIT BIG BANKS

Of the top 40 U.S. banks, the ten listed here have the lowest ratio of loss reserves and equity to high-risk assets—a category that includes LDC debt, real estate lending, and "highly leveraged transaction" loans. The numbers shown below reflect FDIC data, which cover only the operations of the companies' banking subsidiaries and thus may differ from their consolidated financial reports.

To examine how this group could fare if times get tougher, FORTUNE asked Ferguson & Co., a leading bank consulting firm, to put their numbers through its "stress test." This model, described in detail starting on page 120, assumes the economy goes into either a downturn or a bad recession.

In a slowdown, most suffer hefty hits to equity capital. But none, even ailing Bank of New England (BNE), would be hurt so badly that insolvency is a certainty. In a sharp recession, however, the model predicts that BNE would fail and even banks outside New England would take a vicious pounding, ranging from a loss of 74% of equity capital at Citicorp to 37% at First Union.

BANK All figures in millions	ASSETS	EQUITY CAPITAL		
		Current*	Slowdown	Recession
Citicorp	$198,546	$11,056	$8,468	$2,893
Chase Manhattan	$103,343	$5,075	$5,120	$2,478
Chemical	$74,483	$3,851	$4,257	$2,399
Manufacturers Hanover	$55,555	$2,850	$3,221	$1,616
Wells Fargo	$47,016	$3,202	$2,605	$1,491
First Union	$40,225	$2,704	$2,385	$1,690
Bank of Boston	$37,356	$1,906	$1,647	$617
Barnett Banks	$29,397	$1,634	$1,256	$651
Bank of New England	$26,731	$626	$659	-$495
Southeast Banking	$16,729	$744	$626	$274

*Based on FDIC data as of March 31, 1990.

SOURCE: FERGUSON & CO.

for lenders to roll the dice.

To remove that incentive, banks should be forced to do what regulators do only after they move in to liquidate—mark loans and investments to market wherever possible. Where no liquid market exists for an asset, as in the case of nonperforming loans, then some proxy for what that loan realistically should be earning—the prime rate plus a few points, say—should be used to discount its value.

■ Raise deposit insurance premiums. Since its inception in 1933, deposit insurance has proved wonderfully effective in maintaining investor confidence. Its huge drawback, however, is that it enables bankers to make gamier loans than they would if the government were not there to bail out depositors. In 1980, the same year that Reg Q was axed, Congress made that drawback worse by raising the limit on insured accounts from $40,000 to $100,000.

"You want banking insured," says Charles Munger of Berkshire Hathaway. "Bank panics are for the birds."

But current proposals to solve this problem by returning to the $40,000 ceiling or limiting insured accounts to one for each individual miss the point: The real exposure taxpayers face is the *uninsured* deposits of large corporations and pension funds. Under the "too big to fail doctrine"—last seen at work in the 1984 bailout of Continental Illinois—the Federal Reserve and other bank regulators have rightly served notice by word and deed that they would not allow large banks with vast numbers of such depositors to fail. The damage to the banking system from the stampede that would ensue as these depositors scrambled for safety would be too great. Says Charles Munger, the vice chairman of Berkshire Hathaway: "You want banking insured. Bank panics are for the birds."

Instead, Washington would do well to adopt a two-step reform. First, it should stitch up the existing safety net by raising the insurance premiums that banks pay. Seidman of the FDIC has already proposed boosting them from 12 cents for every $100 of insured deposits to 19.5 cents—the maximum allowed by law. That would raise some $5 billion for the insurance fund. Congress should also follow Fed Chairman Alan Greenspan's recent advice and grant the FDIC new authority to go higher if necessary.

Individual depositors, of course, will share the cost of higher premiums, either through higher fees for services or lower interest rates on deposits. They should. They've been getting too good a deal on deposit insurance for too long.

■ Limit insurance to supersafe banks. Once banking's insurance safety net has been made more secure, it must then be cut back so that it covers only low-risk lending. McKinsey's Lowell Bryan calls this establishing "core banks." To remain insured by the FDIC, such banks would abide by strict

"Yeah, I'd say my future here looks great. They like my work. I got a promotion. I've got great benefits..."

"But let's face it: Jobs don't come with a lifetime guarantee anymore."

limits on how they operate. For example, they might be allowed to lend only to individuals, small businesses, and midsize companies and to invest only in government securities.

At the same time Congress should create separate *uninsured* banks that would be free to engage in riskier activities, such as real estate or overseas lending. These banks would also be allowed to enter other long-forbidden financial service businesses like investment banking and insurance, as long as they met those industries' regulatory and disclosure standards. Such institutions would most resemble companies like American Express, General Electric Credit, and Ford Motor Credit. If they emulate this crowd's fine track record, these new banks should have little trouble attracting capital from investors. But under this arrangement, those seeking higher than average returns on deposits would be the ones exposed to any market risk—not U.S. taxpayers.

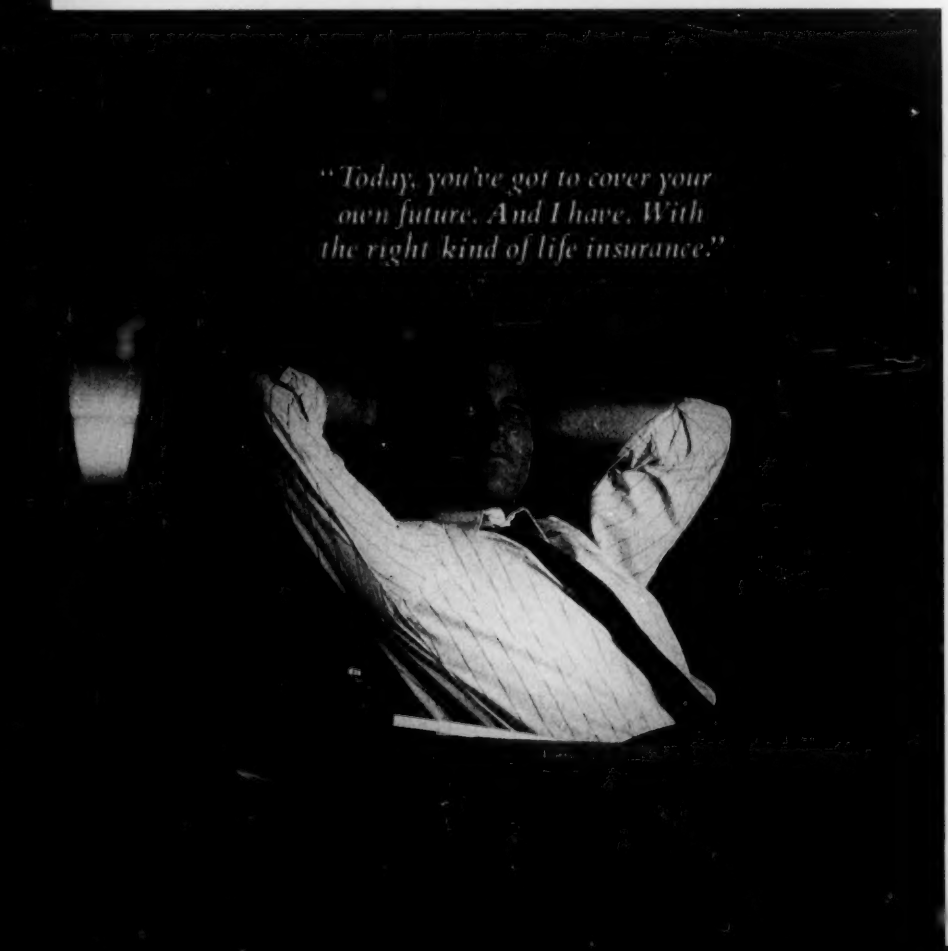
RICHARD HOWARD

This condo near Boston is a Bank of New England loan gone bad.

Finding a way to limit deposit insurance to a narrower version of banking ought to be the keystone of any comprehensive reform. But while this notion has been gaining support, it's still not clear that the White House and Congress will move swiftly enough to avert a crisis. Says Barry Weingast, a senior fellow at Stanford University's Hoover Institution and a close student of the politics of the S&L debacle: "The issue is this: Are our politicians sufficiently chastened or embarrassed by the savings and loan crisis that they will do the responsible thing this time?"

There are grounds to worry that they aren't. For example, the recent reaction of some legislators from New England to that region's banking woes has been distressingly similar to the behavior of their Texas counterparts when the thrifts began to bleed in the mid-1980s. Regulatory forbearance, rather than rigor, is all too often the watchword.

Most citizens, of course, can't be expected to follow the complex ins and outs of banking reform. Therein lies another problem. Observes Stanford's Weingast: "The fundamental flaw we saw in the S&L crisis is that even when politicians understand a problem, unless they feel they can get credit from voters for solving it, they tend to let it unfold." The best way to avoid the fire next time will be if voters at least send Washington a clear message that they will neither forgive nor forget another S&L-style sleepwalk. F



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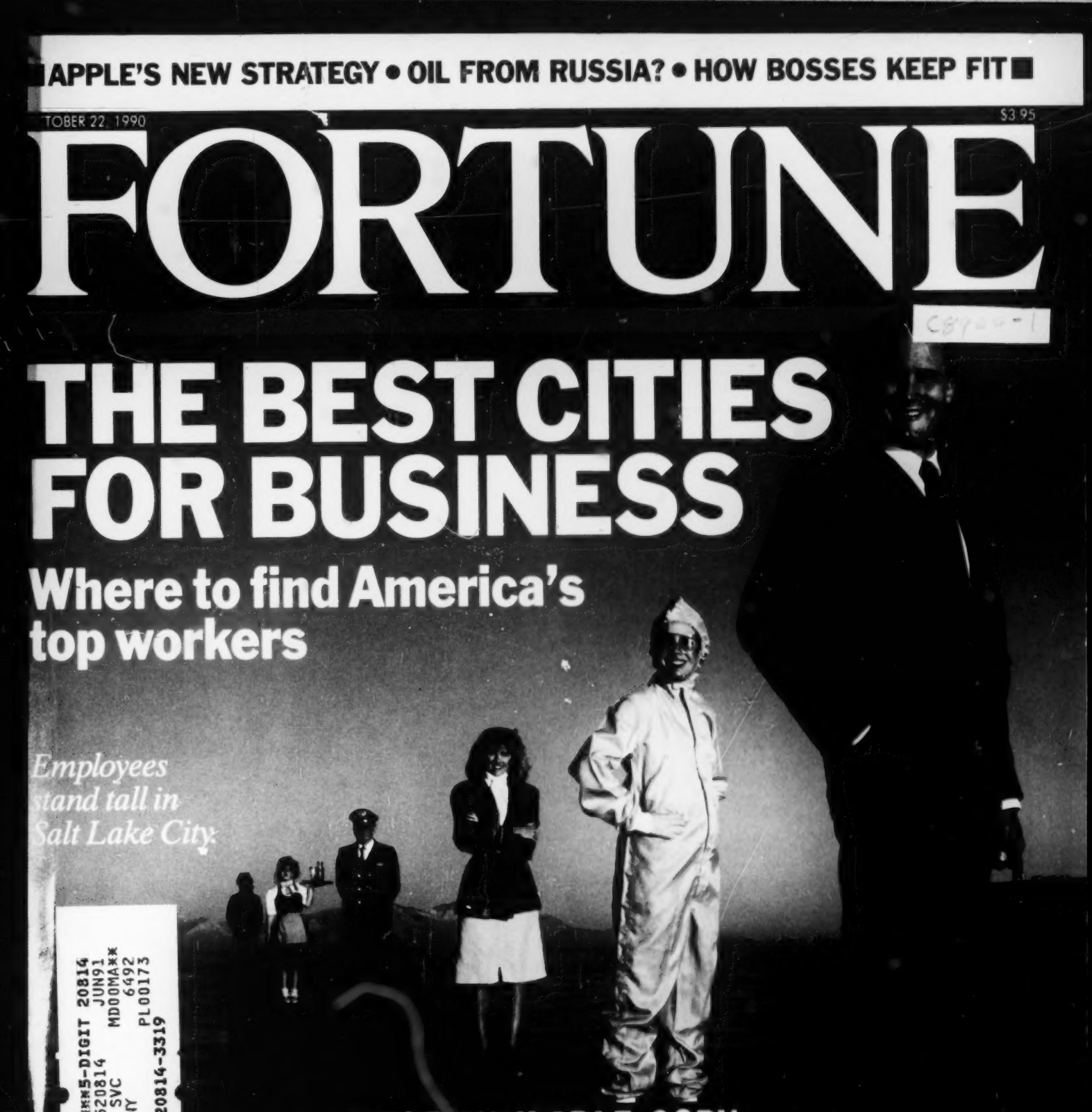

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ABOVE: Louis Psihoyos (Matrix) took this photo of engineers in clean suits in Old Sacramento.

COVER: Workers like these keep companies in Salt Lake City out of deep water. Photographed by Psihoyos on the Great Salt Lake.

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"If we're going to have any kind of country at all, we've got to take care of our biggest natural resource, our kids."

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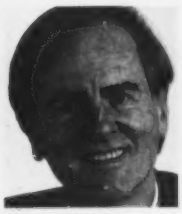

"Apple always does its best when its back is to the wall."

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"You shouldn't have costs in good times, especially people-related costs, you're not prepared to carry in bad times."

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"We are ready to embark on large-scale [oil] exploration, production, and refinery projects now."

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"The peer pressure to stay fit in upper management is much higher than in the general population."

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"GM and the European mass producers seem to be dying the death of a thousand cuts."

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You don't have to. Job stress is epidemic in the lean 1990s as business cracks the whip in response to the labor shortage and global and domestic competition. Yet some companies know how to get more from their employees without driving them out—or crazy. *by Thomas A. Stewart*

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Using robots and computers, a Japanese bicycle company is helping usher in an era of customized manufacturing. Customers get what they crave most—unique products—choosing from among 11,231,862 variations of bicycle. Production is amazingly swift. *by Susan Moffat*

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Many senior managers are becoming as serious about athletics and diet as they are about their work, and for good reason. While exercise used to be a weekly swing around the golf course, a daily regimen is now more common among the fittest. And it shows. *by Faye Rice*

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EDITOR'S DESK

WHEN Commerce Secretary Robert Mosbacher invited the CEOs of 14 U.S. companies to accompany him on a four-day trade mission to the Soviet Union, FORTUNE publisher Jim Hayes found himself the only executive of a media outfit along for the ride. He and Washington correspondent Ann Reilly Dowd attended meetings between top-level Soviet officials and the Americans.

What they saw and heard is reflected in an article by Hayes, "Wanna Make a Deal in Moscow?" (page 113). As far as anyone around here can remember, it's the first time our pages have been graced with an effort by the magazine's publisher, who usually confines himself to running business operations—advertising sales, circulation, and marketing.

"There is an amazing consensus among the Soviets that they must change to survive," Hayes reports. But for all their economic desperation, officials in Moscow and Leningrad insisted they didn't want handouts. "They would say, 'Don't give us foreign aid. It will only feed the bureaucracy that has been resisting our efforts to change.' "

They were looking for other kinds of money, though. Ann Reilly Dowd noted their single-mindedness about oil exploration. At nearly every meeting, officials from Gorbachev on down steered the conversation to this favorite topic. Says Dowd: "It was clear that the Russians' top priority is attracting U.S. investment in oil and gas. It's the key to getting hard currency, to getting food on the shelf."

The Soviets' new willingness to cooperate with U.S. companies in exploring what may be the world's last great untapped oil fields couldn't come at a better time. Saddam Hussein's invasion of Kuwait was a jarring reminder of the fragility of our sources of petroleum. In "Oil From Russia" (page 115), Dowd examines the opportunities—and pitfalls—in looking for oil in the U.S.S.R.

The CEOs learned firsthand about the shortcomings of the Soviet economic system. After one hard day of meetings, they retreated to the bar of their "luxury" hotel for a round of drinks. "Sorry, no beer today," the bartender informed them. Such privation hasn't scared away prospective European investors. Hayes noted that Moscow was swarming with them, particularly German businessmen. "The Soviet Union is potentially such a huge market," he concludes. "Americans must get in there now."

CHARLIE ARCHAMBAULT

Jim Hayes and Ann Reilly Dowd in Moscow

Jim Hayes says that writing the piece was "especially daunting" because he hasn't written an article since high school. "I once dreamed of being a writer for *Sports Illustrated*," he says, "but the only job I could get was as a promotion writer." That led him down the path to sales and on to higher reaches in Time Inc. Magazines. We assured him that he did a lot better than most of our editorial people would trying to prepare a sales presentation.

Dowd suffered no such editorial shyness. She has had major bylined articles in the last five issues of the magazine. That may be a record for a FORTUNE writer.

Marshall Loeb
MANAGING EDITOR

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FORTUNE'S TOP TEN

The skilled, loyal workers in these choice metropolitan areas are the best you'll find anywhere. They're readily available—and should be for years. ■ *by Patricia Sellers and Antony J. Michels*

ASK A BUNCH OF CEOs about their favorite cities and you'll probably hear them evaluate urban life the same way anyone else would. They love San Francisco for the Bay and the restaurants, Seattle for its mountains and relaxed lifestyle, or perhaps Chicago because it's nearly as charged up as New York but not quite as dirty. Great images carry these particular cities and others a long way, and they will always attract companies. But they are not among FORTUNE's top ten cities for business, because they fall short in what has become the most important draw in corporate relocation: plentiful, high-quality, low-cost labor.

The cities that made the cut aren't necessarily the best known or most adored. Fred Rollins III, marketing chief for Delta Air Lines in Salt Lake City (No. 1), says, "People have a misperception that we're backward, that everyone wears wide-brimmed hats and we're out in the boonies, while in many ways we're very progressive." To escape stereotypes and evaluate labor markets objectively, FORTUNE asked the corporate relocation consulting firm Moran Stahl & Boyer to survey human resources executives in the 50 largest U.S. metropolitan areas. Then FORTUNE and MS&B analyzed all sorts of information that measures worker quality and helps delineate availability not only today but also in the future. Extensive interviews and visits to several of the cities helped FORTUNE rank the top ten.

In reading the profiles, it helps to know what's behind a few important measures. The labor market stress index indicates the availability of workers. The higher the score, the tighter the labor market (the U.S. average is 100). MS&B derived the figures by tracking unemployment, changes in annual wages, and employment growth vs. expansion of the local labor pool since 1984. The U.S. population should increase 4% in the next five years; average 1989 unemployment was 5.3%. The average white-collar salaries for each metro area are for workers in finance, insurance, and real estate. The U.S. average in 1987 was $25,326; the average manufacturing salary was $25,473. In a few cases SAT scores are identical for city and suburbs because these places report only areawide scores. The U.S. average SAT score was 908; the average ACT score was 18.8.

Following the profiles of the ten best cities are descriptions of the remaining 40 metropolitan areas, in alphabetical order.

REPORTER ASSOCIATES *John Labate and Thomas J. Martin*

1 SALT LAKE CITY

Population 1990		1,089,388
Pop. growth 1990-95		6%
Unemployment 1989		4.5%
Average ACT scores	city:	19.5
	suburbs:	21.3
Average salaries 1987	manufacturing:	$23,340
	white-collar:	$19,016
Labor market stress index		107

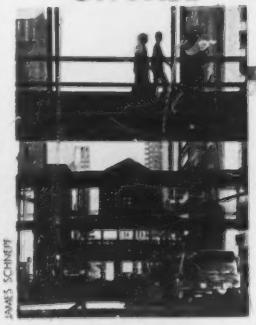
TIM KELLY

The Mormon Temple

■ Everyone thinks it's in the middle of nowhere, but Salt Lake City is the only major Western spot within 850 miles of Phoenix, Denver, Seattle, and all major California cities. Its highways are excellent, and the airport is an easy ten-minute ride from downtown. Since Delta made it a hub, Salt Lake City has more flights than any other city its size. Taxes are moderate; city and state carry AAA bond ratings from Moody's. Literacy is the highest in the U.S., but school classes are large even though Utah spends heavily on education. Mormons produce large families, meaning more children per taxpayer. Quality of life is good, particularly if you ski; city buses reach four resorts. Downtown is dead, but a planned $500 million redevelopment should revive it. Liquor laws are loosening. In restaurants, come July, you'll be able to order a drink much as in any other major city.

2 MINNEAPOLIS/ ST. PAUL

Population 1990		2,462,207
Pop. growth 1990-95		8%
Unemployment 1989		3.8%
Average ACT scores	city:	20.1
	suburbs:	21.8
Average salaries 1987	manufacturing:	$29,823
	white-collar:	$25,449
Labor market stress index		107



JAMES SCHAFF

Downtown skyways

■ Out-of-the-way, self-reliant, civic-minded, and Democratic, this urban pocket on the Northern Plains reflects the values of the Scandinavians who settled in the area. Painfully high corporate and personal income taxes go for heavy expenditures on education, welfare, transportation, and parks. The system works. Minneapolis/St. Paul is among America's cleanest, safest metropolitan areas. Schools are outstanding. Businesses here shell out for status: 135 companies donate at least 2% of pretax profits to charities or local arts groups, and 25 give 10% or more. Minneapolis is Protestant, slightly funky, fun, the main business center. St. Paul is Roman Catholic, the state capital, and the site of more private liberal arts colleges per capita than any other U.S. city. Homogeneity is declining; minorities are 5% of the work force, 15% of schoolchildren. Average January temperature: 12° F.

Sources: Pop. and pop. growth—National Planning Data Corp.; unemployment—BLS; SAT/ACT scores—local agencies and school districts; salaries—Census Bureau

3 ATLANTA

Population 1990		2,872,060
Pop. growth 1990-95		13%
Unemployment 1989		5.1%
Average SAT scores	city:	728
	suburbs:	900
Average salaries 1987	manufacturing:	$25,795
	white-collar:	$27,242
Labor market stress index		100

ANN STATES—SABA

Marta cuts through town.

■ The hub of the South is not too Southern anymore. Local bigwigs—surprisingly few of them native Georgians—boast of the area's fine climate, affordable housing, first-class international airport and rapid transit, scores of golf courses, and unusually lively social organizations. The city proper is 70% black, and poor, with inferior schools and one of America's highest crime rates. But Atlanta is a city in transition: Amid abandoned buildings off Peachtree Street, a marble-laden IBM tower, a brand-new AT&T building, and other offices scrape the sky. In Buckhead, to the north, million-dollar mansions aren't far from a messy mix of malls, hotels, and corporate centers. Gwinnett County, where Japanese companies cluster, is the fastest-growing in the U.S. Once-again Mayor Maynard Jackson, disliked by business when he served in the Seventies, is making friends. While vowing to refocus on inner-city neighborhoods, he says, "I'm pro-business and pro-growth."

4 SACRAMENTO

Population 1990		1,460,724
Pop. growth 1990-95		14%
Unemployment 1989		4.9%
Average SAT scores	city:	949
	suburbs:	960
Average salaries 1987	manufacturing:	$25,513
	white-collar:	$23,867
Labor market stress index		100

ANDY FREEBERG

California's capitol

■ This is the first major noncoastal California city to make it big on business relocation maps. Besides productive and loyal workers, Sacramento offers homes at half the prices in San Francisco and Los Angeles, and generally better schools. It's also not prone to earthquakes because it doesn't sit on a major fault. In many ways Sacramento is still an unsophisticated agricultural town (you sometimes smell the tomatoes as you drive in from the airport) and sleepy government center, but that's changing fast. Buildings didn't used to get higher than the wedding-cake state capitol, but a 30-story Wells Fargo building will soon supplant sleek, black Renaissance Tower, nicknamed "Darth Vader," as the tallest. Residents drive less than two hours to ski Lake Tahoe, sail San Francisco Bay, or hike the Sierras. A deepwater channel to the Bay makes the city a decent shipping point. Local executives long for better air service: There are no direct flights to New York.

5 AUSTIN

Population 1990		787,360
Pop. growth 1990-95		12%
Unemployment 1989		5.4%
Average SAT scores	city:	930
	suburbs:	983
Average salaries 1987	manufacturing:	$25,884
	white-collar:	$20,585
Labor market stress index		80

STEVEN PUMPHREY

The University of Texas

■ "Austin isn't part of Texas—it's Austin," says Bruce Aumack, personnel manager at IBM's operation there. "It's not isolated or barren—and it's got hills." It's also growing faster and has better schools and lower labor costs than its bigger sisters Dallas and Houston. More of its residents have college degrees than do those of any other of the top 50 areas except Washington, D.C., and San Francisco. The University of Texas at Austin, with 50,000 students, has become one of America's premier research universities and supplies a steady stream of skilled graduates to high-tech employers. That's one reason Sematech and MCC, two major high-tech consortiums, placed operations in Austin. Hurt by state government layoffs in the past decade and by a plunge in its sky-high real estate market, Austin offers plenty of workers and lots of empty office space. And there's no better place to come if you've got a song in your heart: The city's Sixth Street is known for its terrific music scene.

6 COLUMBUS

Population 1990		1,375,997
Pop. growth 1990-95		6%
Unemployment 1989		4.8%
Average SAT scores	city:	910
	suburbs:	1002
Average salaries 1987	manufacturing:	$27,509
	white-collar:	$21,454
Labor market stress index		100

BARTH FALKENBERG

A standout for parks

■ A center for banking, insurance, and finance, Ohio's third-largest metropolis offers affordable housing and good schools in an ethnically diverse city with plenty of recreational facilities and parks. Executives rate it among the most attractive business location sites. Manufacturing salaries are high, white-collar pay is low, and the work ethic is outstanding. Downtown is being resurrected. Columbus City Center, a shopping mall across from the Statehouse, opened last year with big-name stores like Brooks Brothers, Gucci, and Ann Taylor. Less conventional culture is found in the Short North section, marked by art galleries and jazz clubs. The architecture of the $43 million Wexner Center, a visual and performing arts facility named for Limited CEO Leslie Wexner, who gave $25 million, has received more attention than the art inside. Crack remains a problem in the inner city. Traffic is getting to be a worry. You can fly to Chicago in an hour and New York in 90 minutes.

7 DALLAS/ FORT WORTH

Population 1990		3,923,388
Pop. growth 1990-95		10.5%
Unemployment 1989		5.5%
Average SAT scores	city:	794
	suburbs:	963
Average salaries 1987	manufacturing:	$27,450
	white-collar:	$26,237
Labor market stress index		100

JAY BROUSSEAU

Las Colinas

■ The Metroplex, as this vast nine-county stretch of land is known, attracted 66,000 newcomers last year. The big draws: affordable homes, low state and local taxes, and the smell of economic recovery. Exxon recently moved headquarters from Manhattan to Las Colinas, a fancy office, residential, and retail development near the airport with Venetian canals and four 18-hole golf courses. Other prime business spots: northern suburbs like Richardson and Plano, which have the good schools that Dallas and Fort Worth proper lack. First-class office space in the suburbs is a bargain at $11.50 a square foot. Executives who work in downtown Dallas are best off living nearby in Highland Park or University Park, oases within the city that have their own governments, police forces, and schools. Weekends aren't what they used to be since the Cowboys fell off their horse. There's not a whole lot to do for recreation deep in the heart of hot, humid Texas.

8 PHOENIX

Population 1990		2,130,850
Pop. growth 1990-95		14%
Unemployment 1989		4.3%
Average SAT scores	city:	944
	suburbs:	992
Average salaries 1987	manufacturing:	$26,475
	white-collar:	$24,403
Labor market stress index		93

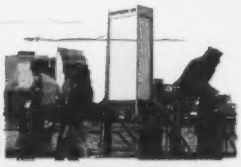
REED BAHN

Acres of affordable homes

■ A steady influx of newcomers will keep the labor force growing faster than jobs, guaranteeing a loose labor market despite the city's low unemployment rate. Schools excel, workers are well educated, and a large community college system answers business's needs. Just a handful of FORTUNE 500 headquarters means you'll probably have to look elsewhere for executives, but you can stay close to home for other employees, among the least unionized in the 50 areas studied. The population is 80% white, 13% Hispanic, 3% black. Office and residential real estate is remarkably inexpensive, the result of overbuilding and of Arizona's many S&L failures. The city is full of vacant lots, and air pollution is still a problem, but the mountains are within easy reach. Sections of a much-needed 230-mile freeway project are complete, relieving traffic within the city. Sky Harbor International Airport is slated to open a $26 million international concourse in February.

9 JACKSONVILLE

Population 1990		941,485
Pop. growth 1990-95		12%
Unemployment 1989		5.7%
Average SAT scores	city:	901
	suburbs:	901
Average salaries 1987	manufacturing:	$22,083
	white-collar:	$24,647
Labor market stress index		87



BUD LEE

Jacksonville Landing

■ A Florida success story without scads of tourists and retirees? That's right. A fast-growing center for service companies of all stripes, especially financial services firms, the area receives steady in-migration, keeping wages low and the labor market loose. The median age is a young 32. Schools aren't exceptional, and fewer than 17% of residents have college degrees, but Florida's generous job training programs and low taxes help compensate. Drugs are a problem, and crime rates are high. Downtown has brightened with the arrival of Jacksonville Landing, a shopping and eating development designed by Rouse Co., beside the St. Johns River. Winters are mild, summers uncomfortably hot and humid. On bad days you may be hit by the odor of two nearby paper mills and chemical plants—"the smell of money," natives used to joke—a reminder of slow-growth, economically depressed days. The city's free annual jazz festival is a better symbol of its condition.

10 OKLAHOMA CITY

Population 1990		961,034
Pop. growth 1990-95		-1%
Unemployment 1989		4.6%
Average ACT scores	city:	15
	suburbs:	21
Average salaries 1987	manufacturing:	$28,008
	white-collar:	$21,142
Labor market stress index		80

GAYLORD HERRON

Myriad Gardens

■ "America's back-office frontrunner," as the city touts itself, is working hard to attract service industries to revitalize an economy sapped by the long energy slump. With many residents unemployed or overqualified for their positions, white-collar wages are low. The housing and commercial real estate markets are a buyer's paradise, and although inner-city public schools are substandard, the city and state offer some of America's best job training and adult education. The city limits enclose a sweeping 624 square miles. The downtown redeveloped by I. M. Pei isn't buzzing with activity, but the elongated botanical walkway in Myriad Gardens and the Omniplex planetarium offer New Age leisure-time alternatives to the National Cowboy Hall of Fame. Or head out to Remington Park, the city's new $93 million thoroughbred racetrack. Area colleges have 106,000 students. Winters are short and mild, summers long and hot, steaks thick and well done.

THE REST OF THE MAJOR CITIES

ALBANY, NEW YORK

■ Slow growth typical of older Northeastern cities, low unemployment, and the difficulty of getting anyone outside state government to move there may turn companies away from New York's capital. But excellent public schools—test scores are well above average in both inner city and suburbs—plus a highly rated state university and white-collar salaries among the lowest in the top 50 metro areas make the city worth a second look.

Population 1990		856,466
Pop. growth 1990-95		2%
Unemployment 1989		4.2%
Average SAT scores	city:	956
	suburbs:	1056
Average salaries 1987	manufacturing:	$25,219
	white collar:	$21,284
Labor market stress index		93

BALTIMORE

■ Labor costs in Baltimore are near the national average but lower than in many Northeastern and Midwestern cities, making the area attractive if it's important to locate your business in the New York City–Washington corridor and gain access to a highly skilled labor force. Steady population growth is also a plus. Inner-city education continues to be a problem, with SAT scores trailing those in the suburbs by almost 200 points.

Population 1990		2,389,385
Pop. growth 1990-95		5%
Unemployment 1989		4.0%
Average SAT scores	city:	754
	suburbs:	945
Average salaries 1987	manufacturing:	$27,369
	white collar:	$25,381
Labor market stress index		100

BIRMINGHAM, ALABAMA

■ Steeped in the spirit of the Old South, Birmingham has high unemployment, low average salaries, and a low cost of living—all potential attractions for an employer. But the population is among the least educated in the top 50 metro areas, with fewer than 70% possessing a high school diploma and only 16% with a college degree (vs. 20% for the nation). Slow population growth and poor marks for labor quality are other disadvantages.

Population 1990		931,129
Pop. growth 1990-95		2%
Unemployment 1989		5.7%
Average ACT scores	city:	16.4
	suburbs:	22
Average salaries 1987	manufacturing:	$21,719
	white collar:	$22,437
Labor market stress index		113

BOSTON

■ Full of the best and the brightest—only Washington, D.C., has a greater percentage of highly skilled workers—this remains an expensive place to live and do business, with white-collar salaries ranking fourth from the top. Weakness in the defense, high-tech, and real estate industries has loosened the tight labor market, but population growth is nil. The poor quality of inner-city education is another drawback for employers.

Population 1990		2,848,981
Pop. growth 1990-95		0%
Unemployment 1989		3.4%
Average SAT scores	city:	764
	suburbs:	998
Average salaries 1987	manufacturing:	$28,176
	white collar:	$28,589
Labor market stress index		120

BUFFALO

■ Despite a declining population and the highest net rate of out-migration from 1980 to 1988 of any of the 50 largest metro areas (8%), Buffalo is full of college students whose skills are waiting to be tapped. Above-average unemployment and many underemployed workers are other draws for prospective employers. Beware of higher-than-average manufacturing wages, though, and a work force that is almost one-third unionized.

Population 1990		949,293
Pop. growth 1990-95		-3%
Unemployment 1989		5.8%
Average SAT scores	city:	N.A.
	suburbs:	969
Average salaries 1987	manufacturing:	$26,814
	white collar:	$23,209
Labor market stress index		87

CHARLOTTE, NORTH CAROLINA

■ Developing into a financial services center and distribution hub in the Southeast, Charlotte has made a smooth transition from heavy dependence on textile manufacturing. Disadvantages: overall low unemployment and a tight market for hourly laborers, plus below-average school scores. But robust growth, low salaries, high quality of life, and a top-notch community college system should continue to attract companies.

Population 1990		1,147,393
Pop. growth 1990-95		8%
Unemployment 1989		3.2%
Average SAT scores	city:	865
	suburbs:	792
Average salaries 1987	manufacturing:	$21,177
	white collar:	$24,673
Labor market stress index		113

CHICAGO

■ Whose kind of town? Chicago is a slow-growing city that experienced net out-migration of nearly 4% from 1980 to 1988. Labor costs are high and so is union membership, giving companies seeking a Midwestern location reason to look elsewhere. The center city continues to struggle, as the low average test scores suggest. While unemployment is above average, companies surveyed rated labor availability lower than in other big cities.

Population 1990		6,259,615
Pop. growth 1990-95		1%
Unemployment 1989		5.5%
Average ACT scores	city:	13.6
	suburbs:	21.4
Average salaries 1987	manufacturing:	$27,204
	white collar:	$30,229
Labor market stress index		107

CINCINNATI

■ Breaking out of its industrial mold and building a service-oriented economy, Cincinnati offers low white-collar wages and a pleasant style of life. Although the proportion of highly skilled workers in the labor force is below the nation's average, employers say the prevailing work ethic is worth a lot. But don't disregard high manufacturing wages, relatively slow population growth, and discouraging inner-city test scores.

Population 1990		1,469,493
Pop. growth 1990-95		3%
Unemployment 1989		4.5%
Average SAT scores	city:	879
	suburbs:	996
Average salaries 1987	manufacturing:	$29,857
	white collar:	$22,122
Labor market stress index		107

CLEVELAND

■ The metro area's population is declining, and the number of 18- to 24-year-olds—the labor force's seedlings—is projected to dip more sharply here than in any other city but Pittsburgh by 1995. That's not surprising for a city with one of the highest net out-migration rates from 1980 to 1988. Test scores show the wide disparity between city and suburbs, but there's evidence of economic revival, and white-collar wages are low.

Population 1990		1,842,553
Pop. growth 1990-95		-2%
Unemployment 1989		4.8%
Average SAT scores	city:	739
	suburbs:	966
Average salaries 1987	manufacturing:	$28,641
	white-collar:	$22,923
Labor market stress index		107

DAYTON

■ A bustling blue-collar city where much of the work force is in automotive parts manufacturing, Dayton experienced net out-migration in the past decade but should have slow growth in the Nineties. While manufacturing wages are high, white-collar salaries are third lowest in the 50 largest cities. Schools are good, and as the economy shifts toward more service jobs, employers can draw on spouses at Wright-Patterson Air Force Base.

Population 1990		958,196
Pop. growth 1990-95		2%
Unemployment 1989		5.1%
Average SAT scores	city:	962
	suburbs:	1007
Average salaries 1987	manufacturing:	$29,022
	white-collar:	$20,020
Labor market stress index		93

DENVER

■ For business, Rocky Mountain high means a mixed bag of high salaries, high SAT scores, and lots of highly educated and skilled workers. The Denver economy hasn't fully recovered from the energy slump of the Eighties, unemployment is average, and labor quality received good marks in executive surveys. Despite slow growth, companies questioned rated the city tops in labor availability. A contender for the top ten.

Population 1990		1,656,279
Pop. growth 1990-95		3%
Unemployment 1989		5.4%
Average SAT scores	city:	928
	suburbs:	976
Average salaries 1987	manufacturing:	$29,660
	white-collar:	$27,112
Labor market stress index		93

DETROIT

■ Like the auto industry that keeps its economy running, the city is in bad shape and a weak candidate as a place to start or relocate a business, despite sky-high unemployment. The inner city is a nightmare, with test scores far below those in the suburbs. A forecast of no population growth in the next five years offsets the low labor market stress index. Manufacturing wages are the nation's highest, fueled by the Big Three.

Population 1990		4,359,173
Pop. growth 1990-95		0%
Unemployment 1989		7.1%
Average ACT scores	city:	12.8
	suburbs:	19.9
Average salaries1987	manufacturing:	$33,935
	white-collar:	$24,066
Labor market stress index		93

GREENSBORO, NORTH CAROLINA

■ If you're looking for some of America's lowest labor costs, Greensboro might be the place. Students overwhelmingly go to public rather than private schools, but the education system is subpar, and a lower than average proportion of residents have high school and college diplomas. Employers rate their workers quite favorably. Unemployment is low, but strong population growth should replenish the labor force.

Population 1990		943,916
Pop. growth 1990-95		5%
Unemployment 1989		3.3%
Average SAT scores	city:	854
	suburbs:	855
Average salaries 1987	manufacturing:	$21,293
	white-collar:	$20,203
Labor market stress index		107

HARTFORD

■ Smallest of the top 50 metropolitan areas, Hartford comes up short in benefits for business. Low unemployment and slow projected population growth mean the labor market is tight and likely to stay that way. The city has the smallest percentage of underemployed workers in the top 50. Wages are high, and 34% of the work force is unionized, compared with 24% on average for all 50 cities. Inner-city test scores are low.

Population 1990		764,054
Pop. growth 1990-95		3%
Unemployment 1989		3.3%
Average SAT scores	city:	701
	suburbs:	911
Average salaries 1987	manufacturing:	$28,719
	white-collar:	$25,552
Labor market stress index		113

HOUSTON

■ The city continues to recover from the oil crunch of the 1980s, and the increase in jobs should greatly outpace labor force expansion as the revival progresses. That could produce a tight labor market; unemployment is above average and population growth slow. Despite the energy slump, wages have remained high in Houston, making the city attractive for workers who can take advantage of low housing costs.

Population 1990		3,260, 646
Pop. growth 1990-95		2%
Unemployment 1989		5.9%
Average SAT scores	city:	855
	suburbs:	955
Average salaries 1987	manufacturing:	$30,795
	white-collar:	$28,870
Labor market stress index		107

INDIANAPOLIS

■ This Midwestern capital is shifting smoothly from a manufacturing base to a more diversified, service-oriented economy. Labor in Indy is tight, with low unemployment, but moderate growth and the availability of workers from outside the metro area should ease the situation. A unified government helps narrow the gap between city and suburban education. The proportion of residents in college is lower than average.

Population 1990		1,261,073
Pop. growth 1990-95		5%
Unemployment 1989		3.9%
Average SAT scores	city:	876
	suburbs:	936
Average salaries 1987	manufacturing:	$28,757
	white-collar:	$22,940
Labor market stress index		120

KANSAS CITY, MISSOURI

■ Employers like the Kansas City work ethic, and several regional and national companies have recently moved back-office operations there. K.C. also has a diverse manufacturing sector. Wages are about average, the population should grow steadily, and the cost of living is below the norm. The city is a rail transportation hub and has more than 200 flights daily. On the downside: City schools are far worse than those in the suburbs.

Population 1990		1,612,035
Pop. growth 1990-95		6%
Unemployment 1989		4.9%
Average ACT scores	city:	14.1
	suburbs:	22
Average salaries 1987	manufacturing:	$26,766
	white-collar:	$25,210
Labor market stress index		107

LOS ANGELES

■ Bigger, in L.A.'s case, *can* mean better, if loads of available labor is what you need. America's largest metro area is one of the few where labor force growth is projected to exceed job increases. Continued strong growth in population, fueled by heavy immigration, plus layoffs in the defense and aerospace industries, makes for a loose labor market. But costs of living and labor are high, inner-city schools are weak, and air quality is poor.

Population 1990		8,904,692
Pop. growth 1990-95		9%
Unemployment 1989		4.7%
Average SAT scores	city:	817
	suburbs:	927
Average salaries 1987	manufacturing:	$26,445
	white-collar:	$27,968
Labor market stress index		100

LOUISVILLE, KENTUCKY

■ A population that isn't increasing and a steep falloff in the number of 18- to 24-year-olds by 1995 could spell trouble even as Louisville sheds some of its blue-collar image and becomes more service oriented. Companies attract workers from outside the area. Attractions: low white-collar salaries and above-average suburban schools. But the proportion of high school and college graduates is below average, and manufacturing wages are high.

Population 1990		968,758
Pop. growth 1990-95		0%
Unemployment 1989		5.5%
Average ACT scores	city:	17.2
	suburbs:	19.9
Average salaries 1987	manufacturing:	$27,519
	white-collar:	$21,878
Labor market stress index		100

MEMPHIS

■ Don't expect to find many highly skilled or highly educated workers here. But if you're looking for a city growing at a healthy clip with plenty of available labor and low manufacturing wages, this could be it. One of the largest wholesale and distribution centers in the South, Memphis is home to Federal Express. The cost of living is below the national average, and the proportion of workers who are unionized is small.

Population 1990		996,323
Pop. growth 1990-95		5%
Unemployment 1989		4.7%
Average ACT scores	city:	14.9
	suburbs:	21.1
Average salaries 1987	manufacturing:	$21,766
	white-collar:	$25,966
Labor market stress index		80

MIAMI, FLORIDA

■ Not for everyone, Miami could be right for certain low-tech manufacturers or service providers. Only 32% of workers are employed in highly skilled jobs, the lowest proportion in all 50 areas, and manufacturing salaries are also the lowest of all 50. Heavy in-migration spurs population growth. Schools are a problem and crime rates high. The economy is increasingly dependent on foreign markets, especially Latin America.

Population 1990		1,854,157
Pop. growth 1990-95		6%
Unemployment 1989		6.4%
Average SAT scores	city:	843
	suburbs:	843
Average salaries 1987	manufacturing:	$17,827
	white-collar:	$24,278
Labor market stress index		80

MILWAUKEE

■ Still thoroughly blue-collar, Milwaukee means making machinery and brewing beer. Manufacturing wages are above average, and the work force is highly unionized. As in other Midwestern areas with slow growth and low unemployment, the number of 18- to 24-year-olds will probably decline sharply. Mediocre test scores might benefit from a new state voucher program allowing students to select public or private schools.

Population 1990		1,401,580
Pop. growth 1990-95		1%
Unemployment 1989		3.8%
Average ACT scores	city:	16.6
	suburbs:	20.8
Average salaries 1987	manufacturing:	$27,390
	white-collar:	$24,139
Labor market stress index		113

NASHVILLE

■ Country music fans may be drawn to the home of the Grand Ole Opry, but businesses face unpleasant music there: a tight labor market and an unemployment rate among the lowest of all 50 areas. Nashville's charms include low salaries, a below-average cost of living, and powerful population growth and in-migration. Competition for labor may intensify in the future, however, pushing up wages.

Population 1990		1,005,609
Pop. growth 1990-95		9%
Unemployment 1989		3.8%
Average ACT scores	city:	17.3
	suburbs:	19.2
Average salaries 1987	manufacturing:	$23,190
	white-collar:	$23,131
Labor market stress index		107

NEW ORLEANS

■ Mardi Gras aside, New Orleans offers little to cheer about. The port city's economy has not fully healed from the energy slump. Unemployment is extreme and white-collar salaries are low; expect a sharp decline in new entrants to the labor force as outmigration erodes the population. Educational attainment is not high. Test scores are low, and the percentage of students attending public schools is the lowest of any in this group.

Population 1990		1,294,884
Pop. growth 1990-95		-3%
Unemployment 1989		7.1%
Average ACT scores	city:	13.8
	suburbs:	18.8
Average salaries 1987	manufacturing:	$26,662
	white-collar:	$22,238
Labor market stress index		80

NEW YORK CITY

■ If you have a choice, think twice before picking the Big Apple. Wages are America's highest, the crime wave continues, and inner-city education is a shambles. The city leads the nation in immigration but has the second-worst labor participation rate of all 50 areas (more a sign of social problems than job scarcity). Though considered a must location for certain professions, many professionals may leave if conditions don't improve.

Population 1990		8,630,058
Pop. growth 1990-95		1%
Unemployment 1989		5.4%
Average SAT scores	city:	788
	suburbs:	940
Average salaries 1987	manufacturing:	$26,817
	white-collar:	$41,420
Labor market stress index		100

NORFOLK, VIRGINIA

■ A city whose star is rising, Norfolk can expect double-digit population growth that will expand the labor force faster than jobs increase—a bonus for business. Norfolk's military bases mean a large number of spouses available for clerical work, and white-collar wages here are lower than in any place examined but Salt Lake City. The area's excellent quality of life is another reason companies should wake up and notice this sleeper.

Population 1990		1,430,506
Pop. growth 1990-95		10%
Unemployment 1989		4.6%
Average SAT scores	city:	907
	suburbs:	868
Average salaries 1987	manufacturing:	$24,318
	white-collar:	$19,514
Labor market stress index		73

ORLANDO, FLORIDA

■ Increasing at a rate unmatched by any of the other 50 cities except West Palm Beach, Orlando's population is employed chiefly in services that revolve around the mass of tourists who flock to Disney World and other attractions. The economy is diversifying and booming, pushing wages up, but continued in-migration should keep salaries below average. Many residents are underemployed, another advantage for companies.

Population 1990		1,034,086
Pop. growth 1990-95		17%
Unemployment 1989		5.1%
Average SAT scores	city:	893
	suburbs:	920
Average salaries 1987	manufacturing:	$24,913
	white-collar:	$22,509
Labor market stress index		93

PHILADELPHIA

■ Even with its serious fiscal crisis, Philly still stands out. The city has a large, well-rounded economy, and wages and other business costs are lower than in other major Northeastern centers. Slow population growth and low unemployment result in a slightly tight labor market. The city is trying to improve inner-city schools, which is a good idea—fewer students attend public school here than in almost any city among the 50.

Population 1990		4,982,607
Pop. growth 1990-95		3%
Unemployment 1989		3.8%
Average SAT scores	city:	779
	suburbs:	941
Average salaries 1987	manufacturing:	$26,885
	white-collar:	$25,870
Labor market stress index		107

PITTSBURGH

■ Pittsburgh has taken big steps toward becoming a high-tech center with the aid of Carnegie Mellon and the University of Pittsburgh, but out-migration continues as the economy struggles. The projected population decline over the next five years is the largest of any of the areas studied. As job expansion heats up, labor force participation may improve, mitigating the population loss. Attractions: cheap housing and good suburban schools.

Population 1990		2,065,074
Pop. growth 1990-95		-4%
Unemployment 1989		4.6%
Average SAT scores	city:	839
	suburbs:	990
Average salaries 1987	manufacturing:	$29,399
	white-collar:	$23,475
Labor market stress index		100

PORTLAND, OREGON

■ Packed with pluses, Portland ranks near the top. Beautiful natural surroundings, excellent public schools, a highly educated labor force with a strong work ethic, and wages close to or below average make this a smart alternative to California. The city's recent rapid growth has tightened the labor market. Manufacturing has tended to move with the cycles of the lumber and wood products industries and is dominated by a few players.

Population 1990		1,226,733
Pop. growth 1990-95		7%
Unemployment 1989		4.5%
Average SAT scores	city:	915
	suburbs:	968
Average salaries 1987	manufacturing:	$25,433
	white-collar:	$22,044
Labor market stress index		120

RICHMOND

■ The labor outlook in Virginia's attractive capital is less than a knockout, despite projected population growth. Costs, especially manufacturing wages, are higher than in many Southern cities, and unemployment is among the lowest in the 50 areas. A high percentage of students go to the public schools, but the gap between city and suburban test scores suggests trouble. A low percentage of residents have high school diplomas.

Population 1990		864,592
Pop. growth 1990-95		7%
Unemployment 1989		3.6%
Average SAT scores	city:	762
	suburbs:	929
Average salaries 1987	manufacturing:	$29,356
	white-collar:	$24,285
Labor market stress index		107

ROCHESTER, NEW YORK

■ With population not expected to increase, net out-migration, and low unemployment, Rochester resembles its New York brethren Albany and Buffalo. Manufacturing wages are among the highest in the 50 areas studied, thanks in part to large resident employers such as Eastman Kodak and Bausch & Lomb. The area is noted for corporate involvement in educational reform and for the top-notch quality of its highly unionized work force.

Population 1990		980,221
Pop. growth 1990-95		0%
Unemployment 1989		4.2%
Average SAT scores	city:	817
	suburbs:	997
Average salaries 1987	manufacturing:	$31,071
	white-collar:	$22,886
Labor market stress index		100

ST. LOUIS

■ A slow-growing city with a loose labor market, St. Louis is a major hub for transportation by air, water, and rail. Manufacturing wages are high, reflecting the industrial presence of McDonnell Douglas, General Motors, and Chrysler, among others. The contrast in quality between suburban and city schools is among the starkest in the U.S. Universities are a strong presence in the community, and the work ethic shines.

Population 1990		2,489,411
Pop. growth 1990-95		2%
Unemployment 1989		5.5
Average SAT scores	city:	789
	suburbs:	1023
Average salaries 1987	manufacturing:	$29,459
	white-collar:	$23,366
Labor market stress index		93

SAN ANTONIO

■ If you can take the heat, take the bait San Antonio holds out: a plentiful supply of labor at low cost, one result of the highest unemployment rate of the 50 areas studied. Strong population growth should keep labor available. Residents overall are not highly skilled but could fit the needs of companies seeking nontechnical assembly or light manufacturing labor. Costs of living and housing are low, but the schools need improvement.

Population 1990		1,368,438
Pop. growth 1990-95		9%
Unemployment 1989		7.3%
Average SAT scores	city:	743
	suburbs:	910
Average salaries 1987	manufacturing:	$20,298
	white-collar:	$22,771
Labor market stress index		73

SAN DIEGO

■ Growing in population even faster than Los Angeles, San Diego will likely add more workers than jobs in the next five years, easing the labor market. The economy, long reliant on the Navy and defense-related industries, is beginning to diversify. Quality of life is high, with beautiful beaches and an ideal climate. But take heed: Employers have been known to complain about the laid-back California work ethic.

Population 1990		2,508,993
Pop. growth 1990-95		15%
Unemployment 1989		3.9%
Average SAT scores	city:	904
	suburbs:	955
Average salaries 1987	manufacturing:	$26,954
	white-collar:	$26,475
Labor market stress index		100

SAN FRANCISCO BAY AREA

■ Be prepared to pay dearly to do business by the Bay. Labor, if you can find it, is expensive, especially white-collar workers. The cost of housing is the highest in the 50 areas, with a four-bedroom home selling for $462,800, according to a recent study by Runzheimer International. But locate here anyway if you need particularly well-educated and skilled workers in a center of finance, high technology, and R&D.

Population 1990		5,156,572
Pop. growth 1990-95		6.1%
Unemployment 1989		3.3%
Average SAT scores	city:	855
	suburbs:	958
Average salaries 1987	manufacturing:	$29,124
	white-collar:	$31,810
Labor market stress index		107

SEATTLE

■ Most of the good things you've heard are true. A large proportion of Seattle's growing population have a high school diploma (even more than in Salt Lake City), schools are superior, and workers are highly skilled. Labor is tight. Manufacturing costs are steep because of Boeing's dominant presence. But the economy is less dependent on the aircraft giant than it used to be and is diversifying into sectors like computer software.

Population 1990		1,948,378
Pop. growth 1990-95		11%
Unemployment 1989		4.6%
Average SAT scores	city:	944
	suburbs:	980
Average salaries 1987	manufacturing:	$31,605
	white-collar:	$24,975
Labor market stress index		113

TAMPA

■ Another Florida growth powerhouse built on in-migration, Tampa is persuading businesses to locate offices here and take advantage of the lowest overall salaries in all 50 areas and an affordable cost of living. With over two million people in the metro area and an abundant labor pool augmented by lots of retirees, Tampa competes with Orlando to lure companies. And as in Orlando, the area's economy is driven by tourism.

Population 1990		2,079,323
Pop. growth 1990-95		11%
Unemployment 1989		5.0%
Average SAT scores	city:	904
	suburbs:	899
Average salaries 1987	manufacturing:	$21,930
	white-collar:	$22,934
Labor market stress index		87

WASHINGTON, D.C.

■ The capital's problems extend to the labor market, which is tight in the inner city, where the population is diminishing, and also in outlying areas, even though population is increasing. Unemployment is the lowest of the 50 areas studied, and wages are high. Test scores show the contrast between city and suburbs. Washington's economy is diversifying away from government, and its overall work force is highly skilled and educated.

Population 1990		3,860,717
Pop. growth 1990-95		9%
Unemployment 1989		2.7%
Average SAT scores	city:	707
	suburbs:	982
Average salaries 1987	manufacturing:	$27,921
	white-collar:	$24,888
Labor market stress index		120

WEST PALM BEACH, FLORIDA

■ People migrated here in the Eighties at a faster rate than in any other of the 50 areas studied, and the population should continue growing fast. Add that to unemployment that is already on the high side and a low labor market stress index, and consider the advantages. Nevertheless, some companies rate work force quality low. Also beware of high manufacturing wages, low school test scores, and a high crime rate. ■

Population 1990		873,202
Pop. growth 1990-95		17%
Unemployment 1989		6.0%
Average SAT scores	city:	886
	suburbs:	886
Average salaries 1987	manufacturing:	$31,346
	white-collar:	$24,792
Labor market stress index		87

HOW TO MAKE WORKERS BETTER

America's leading chief executives want more effective employees and have strong views about what will be needed to get them. Step one: Improve the schools. ■ *by Andrew Erdman*

WITH WORK FORCE quality one of the key competitive issues of the 1990s, it's worth asking whether U.S. business is gaining or losing ground. Ask the CEOs of some of America's largest companies, and the response is far from comforting: They're not at all sure.

A plurality—some 39%—feel the nation's work force has improved over the past ten years, despite common complaints that American labor has made the U.S. pathetically uncompetitive. Says Consolidated Papers' George W. Mead: "I frankly have a very high opinion of the work force that I work with and don't believe it could be matched anywhere in the world."

Q How has the quality of the U.S. work force changed in the past ten years?

A

Improved	39%
Grown worse	34%
Stayed the same	26%
Not sure	1%

Q Do the following institutions or factors improve or worsen the quality of the U.S. work force?

A

	Improves	Worsens	Neither	Both
Colleges and universities	64%	17%	19%	*
Managerial styles of U.S. companies	57%	32%	10%	1%
Public education system	13%	76%	11%	—
Labor unions	6%	83%	10%	1%

*Less than 1%.

But some of his peers beg to differ. A disturbing 34% of the brass believe U.S. workers have grown worse in the past decade, while 26% think they have stayed much the same (and 1% aren't sure). The major causes of the decline, say these chief executives, are labor unions and the public education system, which pumps ill-prepared high school graduates into the workplace. Casting stones homeward as well, nearly one-third believe the way U.S. workers are managed is an important factor in why they don't perform better.

Q Is your company spending more on educating workers than it did ten years ago, spending less, or spending about the same amount?

A

More	91%
Less	—
About the same	9%

These are the most striking findings of the latest FORTUNE 500 CEO Poll. The opinion research firm Clark Martire & Bartolomeo interviewed 206 chief executives of FORTUNE 500 and Service 500 corporations between July 31 and August 8.

While unions were the most frequently criticized obstacle to bettering productivity, corporate leaders were far more vocal about what they considered America's pitiable public education system. "We're graduating kids who can't even read their own diplomas," laments Edward Hennessy Jr. of Allied-Signal, the New Jersey–based aerospace giant. In response Allied has started programs in reading and spelling for its workers and continues to bulk up its other training.

It's not alone. More than 90% of CEOs surveyed indicated that they spend more on educating employees today than they did in 1980. Almost all are committed to the idea that corporations must step in and help educate workers because government hasn't been up to the job. "Management has got to pick up the challenge of education," says E. C. Gwaltney of Russell Corp., one of the largest textile and apparel manufacturers. Referring to the students public schools are turning out, W. W. Sprague Jr. of Savannah Foods & Industries adds, "Business must be involved, since the product we are getting stinks." No kidding: About 20% of Russell's employees are functionally illiterate, according to its chairman. The company offers a wide array of adult education programs.

Little about the way public schools are run appeals to these chief executives. They

"We're graduating kids who can't even read their own diplomas."

KEN KERBS

EDWARD HENNESSY JR. Allied-Signal

REPORTER ASSOCIATE *Sandra L. Kirsch*

understand competition and think it would shape up the schools: Three-quarters believe parents should be able to choose the school their children will attend instead of having to patronize educational monopolies. Nearly all the CEOs polled favor basing teachers' salaries on performance and seniority, rather than on the latter alone. An object of particular disdain is the tenure system employed by many school boards. NCNB Chairman Hugh McColl says flatly, "Get rid of it."

The CEOs strongly favored certain other proposals for improving the schools:

- Restructure large school districts so they include magnet schools specializing in certain disciplines.
- Keep schools open year round, allowing students to progress at their own pace.
- Eliminate undergraduate teaching degrees. Instead require future teachers to major in an academic field and add a fifth year of instruction emphasizing classroom experience.

The chief executives saw little merit in other proposed reforms, such as abolishing traditional grade levels or creating a national board to certify new teachers. This last idea apparently touched a nerve among the CEOs, who often in these polls have strongly opposed government involvement as a solution to problems. NCNB's McColl says, "Anything the national government gets in, they make a bureaucracy of. They ensure mediocrity." 3M's Allen Jacobson agrees and urges the U.S. to "get rid of excessive government regulation" in order to increase worker productivity.

Q A How would you rate the following proposals for reforming U.S. public education?

	Excellent	Good	Fair	Poor
Base teachers' salaries on performance plus seniority, not seniority alone.	60%	36%	3%	1%
Restructure large school districts to include magnet schools as centers for math, science, etc.	36%	48%	13%	3%
Allow parents to choose from among public schools.	35%	40%	18%	7%
Keep schools open year round.	29%	45%	21%	5%
Eliminate undergraduate teaching degrees and require an undergraduate degree in an academic subject plus a fifth year stressing classroom experience.	24%	47%	21%	8%
Create a national board to certify new teachers.	13%	27%	19%	41%
Eliminate traditional grade levels and allow students to move faster or slower on various subjects.	11%	37%	29%	23%

But might not mismanagement be standing in the way of U.S. workers? 3M's Jacobson, like most of his colleagues, doesn't believe so: "I think our management style has improved. We're using more of the whole person—the mind as well as the hands." But other company chiefs disagree. Charles Peck of the Ryland Group, a Maryland-based homebuilder, thinks managers are too often "distracted by short-term interests" when they should instead be creating a "quality attitude and culture" for employees. And more

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than one top executive thinks labor quality and productivity suffer from management's atrophied knowledge of the brass tacks of operations. Says John Nichols of Illinois Tool Works: "We have too many managers in finance or marketing, not enough operational leadership." And Russell's Gwaltney groans, "We don't have enough manufacturers around. We have too many MBAs, and they don't know how to run a manufacturing operation."

As any sociologist knows, a malady in one part of the social organism usually means trouble for another. Realizing this, a number of respondents say that some workers aren't all they could be because of family trauma and events in the developmentally crucial early years of life. "A building is only as good as its foundation," says Richard Wollenberg of Longview Fibre, and for many workers the foundation is not solid. He adds, "The basic problem is parental neglect." Says Jerry Junkins of Texas Instruments: "In the long term we need to significantly improve preschool activities across the board, including health and nutrition, to try to make up for the results of the breakdown of the family unit."

Q **What is the most important step American government or business can take to improve the quality of the U.S. work force?**

A

Improve education	**64%**
Raise educational standards	**16%**
Give families more responsibility for education	**5%**
Give localities more control of education	**5%**
Pay teachers more	**5%**
Other suggestions regarding education	**14%**
Expand training programs for employees	**11%**
Improve incentives for workers	**7%**
Manage better	**6%**
Reduce government intervention	**5%**
Address the dissolution of the family	**3%**
Other	**10%**

Adds to more than 100% due to multiple responses.

As for which factors improve U.S. workers, a solid majority of CEOs cited higher education. Beaming over the crop of college grads that 3M attracts, CEO Jacobson thinks these youngsters enjoy "probably the best college and university education in the world." Like many of the CEOs, Robert Sharp of Boston's Keystone Provident Life thinks U.S. elementary and secondary education is in trouble. But, he says, "the situation for college graduates is not as serious."

It may be comforting that more CEOs think U.S. workers have improved in the past decade than think they have become worse. Yet how does that square with the widespread view that many U.S. workers still aren't up to world standards? W. R. Timken Jr. of steelmaker Timken agrees that American workers are getting the job done better than they used to, but he points out that "requirements may have outpaced the improvements." In other words, better may not yet be good enough. F

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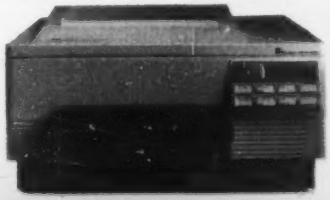

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FORTUNE

Investors this fall will have to navigate perilous seas like this one, painted by Robert Crawford. Cover designed by Fran Fifield.

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EDITOR'S DESK

THE WORST of times for people who invest can be the best of times to seek specific advice on where to put your money for safety *and* growth. And these certainly seem like some of the worst of times. Nothing is certain, from the political powder keg in the Middle East to the volatile markets in stocks and bonds. Even the most conservative of investments—cash in an FDIC-insured bank—feels like a gamble, given the parlous condition of the Federal Deposit Insurance Corp.

So the timing is propitious for our sixth annual Investor's Guide. It provides plenty of calm counsel on topics including the investment fundamentals that you need to plan for the 1990s long term and the best ways to cope with short-term market gyrations.

This year's Guide is edited by John Curran, our Personal Investing editor. An investment fan as boy and man, Curran bought his first stock before his voice changed and has been writing about the markets since 1976. Leading the crew of 40-plus who put this issue together through such a rocky period was a special challenge. Says Curran: "You feel like the deck officer of an aircraft carrier, managing a flurry of night landings in the middle of a storm."

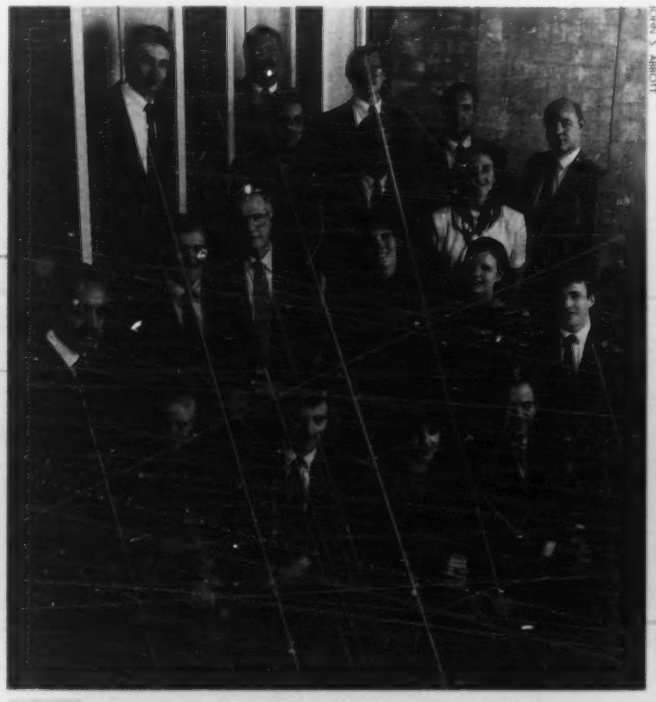
Well, speaking of rough times, we still remember the day our Investor's Guide came out three years ago. It hit the newsstands October 19, 1987—Black Monday, when the stock market plunged 508 points. Now that *was* one of the worst of times, and, as it turned out, among the best of times to scoop up bargains. People who followed the Guide's advice did extremely well.

More than ever, this year's Guide provides the tools to map out a comprehensive strategy. For example, writer Brian Dumaine's article on how the 1990s will be different for investors not only dissects the trends for the new decade but also provides invaluable perspective. As Dumaine says, "If you understand how markets work, you'll save yourself a lot of sleepless nights."

We think this is our best-looking Guide yet. Credit goes to designer Barbara Smyth and to Mark Rosenthal, who crafted all the issue's charts. Says Smyth: "We wanted it to be very people-oriented and user-friendly." We trust that you will find exactly what you want—sound, timely, useful advice for an uncertain world.

Marshall Loeb

MANAGING EDITOR



JOHN S. ABBOTT

Editor Curran (seated center) with the Guide's crew

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SAFE-HAVEN STOCKS

PICK FROM RECESSION-PROOF COMPANIES, ESPECIALLY GROWTH STOCKS, AND FROM THE ENERGY SECTOR.

■ BY ANDREW EVAN SERWER

INVESTORS this fall must feel like Ulysses and his men sailing on an endless voyage through perilous seas. Will they ever make it home? Between the uncertainties in the Middle East and recession fears, "land ho!" may be a while coming. Owning stocks is more than a little discouraging right now, because the market has been tacking southward since the Dow Jones industrial average reached a record 2999.75 in mid-July. Few market seers find any reason for stocks to rebound dramatically. And if you're thinking of switching to bonds, real estate, or commodities, the articles that follow suggest only selective pickings there.

It's far from the worst of times, however. Those who closely watch technical indicators see favorable blips, and some stocks already appear temptingly cheap. A few hardy souls are cherry-picking right now. Among them is Harold Mackinney Jr., president of Fleet/Norstar's investment advisory firm in Providence. Says Mackinney, whose outfit runs a cool $13 billion: "The market looks like a candy store if you don't think the world is going to end."

For the time being, investors should limit themselves to a select group of safe stocks. But be prepared to step up buying at the first sign of the sun peeking through the clouds.

The pessimists have no trouble building a case. Though some economists refuse to proclaim a recession, slow growth seems almost certain to continue over the next several quarters (see The Outlook). To make matters worse, high oil prices could nudge up inflation. Fear of the icebergs and shoals of recession and inflation has driven some melancholy investment strategists to discuss 2000 on the Dow as a serious possibility. Only with prices one-third lower than their recent highs, growl these bears, would stocks

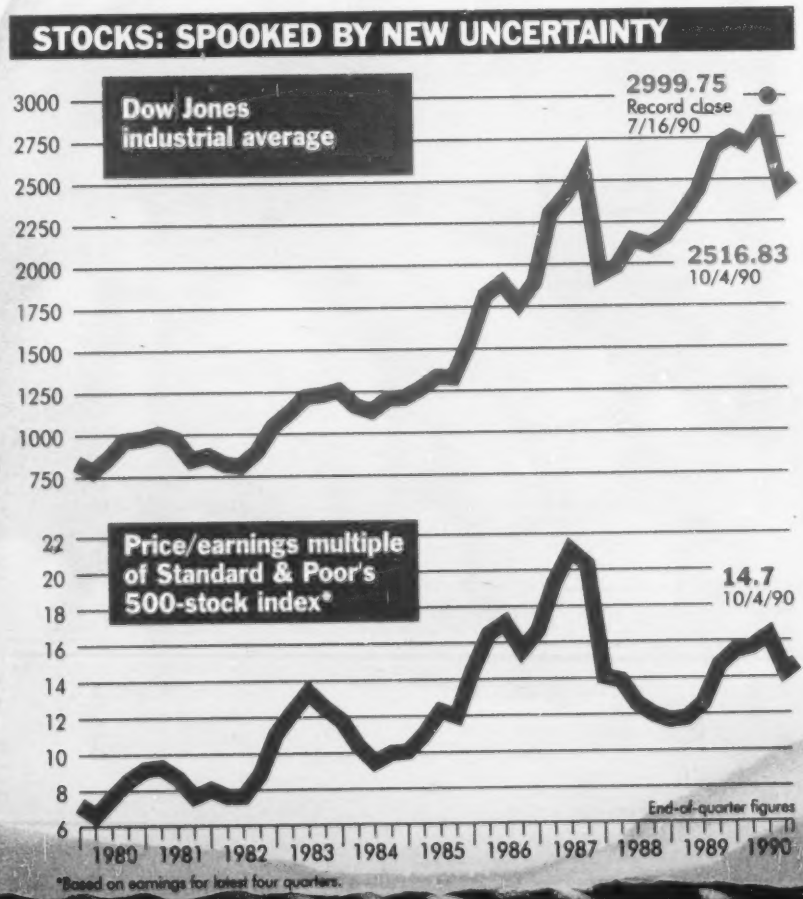
FOR A RISKY MARKET

appear enticing. "The danger from here is not a quick fall but more of a long, insidious slide," says Dean LeBaron, chief investment officer for the $7 billion piloted by Boston's Batterymarch Financial Management.

Even with the market off about 15% from its peak, most stocks are not cheap, especially if recession haunts you. The price/earnings multiple of Standard & Poor's 500-stock index stands at 14.7, quite a drop from its recent high of 17 but still way above an average of 9 during the past three recessions. For the market to sell that low, the Dow would have to thump all the way to 1600. While few predict anything so catastrophic, other barometers suggest the market could keep drifting down for a while. With the S&P 500 dividend yield at 4%, below the 6% reached in some past bear markets, it's hard to say the market has hit bedrock on that basis.

Steven Einhorn, chairman of the investment policy committee at Goldman Sachs, is one strategist who wouldn't be surprised to see the market head for the tropics this winter. "Stock prices just don't yet reflect all of the weaknesses inherent in the economy," he says. According to Wall Street analysts' forecasts of earnings per share, as compiled by the Institutional Brokers Estimate System, the consensus calls for 7% growth this year and 15% for 1991. Wishful thinking, says Einhorn, who sees zero growth in 1991. Plugging his numbers into a dividend discount model, which weighs the relative value of stocks and bonds, Einhorn figures the market is 12% to 15% overpriced.

Many economists, who focus on operating profits rather than earnings per share, hold a somewhat brighter view, reflected in FORTUNE's forecast. But Wall Streeters, even those counting on improved earnings per share, are concerned about a dropoff in the quality of earnings. They are overstated at least 10% by the effect of inflation on inventories and the gap between depreciation charges and true replacement costs. Low-grade earnings do not bode well for dividends. According to Standard & Poor's, the number of companies increasing dividends is down 22% in 1990, while payout cuts



WHAT THE HECK DO I DO NOW?

STOCKS

■ For now, concentrate on growth companies and those whose sales hold up in recessions. Some of the pros like natural gas stocks and expect the run in oils to continue. But the bears are growling, not without reason, so don't stray far from the low-risk stuff.

BONDS

■ The watchwords are safety and intermediate-term maturities. Between worries about inflation and recession, plus the uncertainties in the Persian Gulf, interest rates have been dancing up and down. Best bet: seven-year Treasury bonds yielding a fat 8.6%.

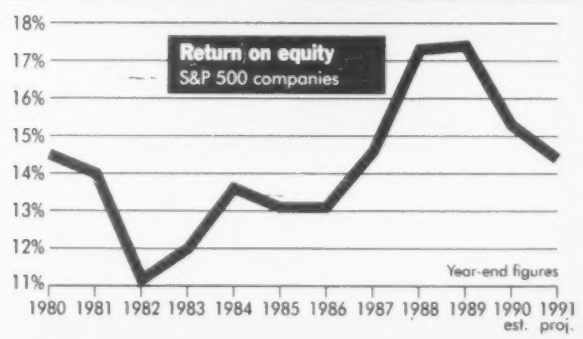
REAL ESTATE

■ Lots of wreckage here. Nevertheless, a few jewels now look cheap, especially some well-run real estate investment trusts with low debt, good occupancy rates, and dividend yields heading above 9%. Also worth a close look: health care REITs.

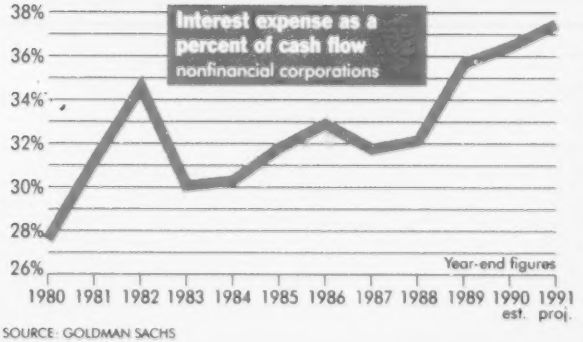
COMMODITIES

■ Gold is in a price rut, likely to remain at roughly $400 or so an ounce because inflation jitters aren't strong enough to move the metal higher. Only a war with Iraq could lift gold as high as $500. The commodity experts foresee lower copper and grain prices.

PROFITS ARE FALLING . . .



. . . AND THE INTEREST BURDEN IS RISING



SOURCE: GOLDMAN SACHS

LEAN TIMES ARE HERE

Companies are finding it tough to raise prices these days. So return on equity, based here on operating earnings, is down even though equity has thinned.

In good times or bad, debt has to be serviced. With profits off, interest costs are eating up a higher proportion of corporate cash flows than they have in years. One result: fewer dividend increases.

are up 48%. Reason for the chopped dividends: too little profit and too much debt.

Debt was widely perceived to be a magic elixir in the 1980s, when stock prices levitated as management borrowed heavily for takeovers and leveraged buyouts. Today, with banks holding back on the credit that fuels deals, merger mania is history. *Mergerstat Review*, published by Merrill Lynch, reports that the dollar volume of mergers and acquisitions is down $66.3 billion, or 44%, so far this year. Gone are the premium prices that scores of stocks commanded as potential takeover candidates. Says LeBaron of Batterymarch: "The broader market indexes began to decline when dealmaking died out in the fourth quarter of 1989."

Debt worked wonders another way. Leveraging up balance sheets reduced the equity portion of companies' capitalization, which translated into a higher return on equity from the same profits. Even amid lofty debt levels, ROE has been declining of late. Sluggish sales have made it difficult for companies to raise prices, and this has cut into profit margins. Worse, a huge chunk of companies' cash flow is now garnisheed for debt service. According to Goldman Sachs, which defines cash flow as pretax profits plus depreciation, capital consumption adjustments, and interest paid, interest expense will devour more than 37% of cash flow in 1991 (see chart).

FORGET ABOUT foreign aid for the stock market. Cheap stocks, robust economic growth, and deal mania drew foreign investors to the U.S. market in the 1980s. With the domestic economy slowing and interest rates rising abroad, overseas buyers are saying *sayonara*, *auf Wiedersehen*, and cheerio as they move their money to Europe and the Pacific Rim. Einhorn of Goldman Sachs points out that foreigners have liquidated $8 billion in U.S. equities to date this year, a record by far. Says he: "There's nothing I see to suggest that they are coming back anytime soon."

Before you hibernate with the bears, however, take note of a few cheerful signs. Elaine Garzarelli, quantitative analyst at Shearson Lehman Brothers, says one bullish factor she cranks into her forecast is the bearishness among investment advisers. *Investors Intelligence* of New Rochelle, New York, finds that 52% of surveyed advisers are downbeat. Any reading over 50% is a favorable omen. Then

REPORTER ASSOCIATE *Laurie Kretchmar*

there's an arcane little gauge called public-to-specialist shorting, or the ratio of short-selling by the public to that of in-the-know hotshots. Anything above .60 is considered bullish because it suggests that the amateurs are becoming more negative than the pros consider appropriate, and lately the needle has been at .98.

OFFICERS and directors of companies are sanguine too. The *Insiders* newsletter of Fort Lauderdale, Florida, reports that 78% of all recent insider trades were buys, more than double the perennial average of 35% and close to the record high of 89% after the 1987 crash. Newsletter editor Norman Fosback is keen on several stocks that insiders are snapping up, including **Chrysler**, **Maytag**, and **UNC**, which makes and repairs jet engine parts.

Mackinney of Fleet/Norstar, using a formula he calls the "the rule of 18.5," figures the market should be up near 3000. The formula assumes that over time the sum of the inflation rate and the average price/earnings multiple of the Dow stocks tends to home toward 18.5. Mackinney sees inflation staying at around 4% on the consumer price index. Ergo, the P/E of the market on next year's earnings should be around 14.5 instead of the recent "forward" multiple of 12, putting the market back at its all-time high. Even at the 6% inflation rate FORTUNE expects next year, Mackinney's formula would boost the Dow 100 points. "I think we will figure things out in the Middle East within the next six months," Mackinney says. "Then energy prices will be back down quickly to the low 20s per barrel of oil."

So what to buy? Mackinney is eyeing bank stocks—warily. Shares of such money center banks as **Chase Manhattan**, **Chemical Banking**, and **Citicorp** have plummeted more than 50%. Like many experts, Mackinney thinks they have yet to hit terra firma. But elsewhere he sees sound buys. He likes **Dow Chemical**, selling at $39 with a $2.60 dividend. **AMR** has gone from $107 to $42. "Yes, the airline is being hurt by higher fuel costs, but not that much," he says. He favors **Ford Motor**, which sells for $31 and comes equipped with a $3 dividend.

To participate in this market, investors should look first for shares in certain stock groups—such as drugs, liquor distillers, and tobacco—that tend to perform better than others during recessions (see table). These stocks generally hold up well, since people go right on taking pills and sipping cocktails when times are bad. Most experts doubt that proposed tax increases will significantly cut into sipping or smoking. Because of the troubles in the Middle East, oil stocks and precious metal shares were recently the place to be. They were also stars in the 1973–75 downturn, which was partly brought on by OPEC's first oil price shock.

Many analysts expect the run in oil stocks to continue. They are even more bullish about gas pipeline companies, which benefit because some industries turn to gas when oil prices rise. Charles Clough, chief investment strategist at Merrill Lynch, recommends gas stocks with respectable dividends. He likes **Consolidated Natural Gas**, which yields 4%, **Sonat** (4.1%), and **Enron** (4.4%).

Einhorn likes energy companies, but he likes growth stocks even more. "Relative stock price performance follows relative earnings growth," he says. "Over the next year or so, growth stocks will be the ones turning in the best earnings." He sees dividends of growth companies pushing ahead 15% next year, compared with 5% for the rest of the market. These stocks are also selling for a smaller premium than usual over other stocks. Among Einhorn's picks: **General Mills**, **Bristol-Myers Squibb**, **Merck**, and **Philip Morris**.

Oil and natural gas stocks are all right for now, says Garzarelli, who doesn't rule out a nasty economic slump. But she's looking beyond to the next expansion. "Coming out of a recession, your best-performing groups are the consumer durables, such as autos, leisure time, and appliances," she says. Over the past 12 months, she notes, **GM** has fallen 28%, Ford is off 43%, and Chrysler is down 64%. In leisure time, sporting-goods maker **Brunswick** is off 58%, while **Outboard Marine** is down 64%. Appliance maker **Whirlpool** is off by 40%, and **Maytag** is down 47%. "These stocks have been so beaten down," says Garzarelli, "they are already looking attractive."

If she's right, maybe more investors should clamber up for a view from the crow's-nest. F

THE BEST AND THE WORST IN RECESSIONS

PERIOD: 11/73 to 3/75		PERIOD: 1/80 to 7/80		PERIOD: 7/81 to 11/82	
STRONGEST STOCK GROUPS					
Precious metals	45.7%	Precious metals	29.1%	Beverages	29.7%
Coal	19.3%	Oil services	25.9%	Home finance	28.9%
Supermarkets	1.3%	International oil	22.4%	Supermarkets	22.7%
Shipping	–3.5%	Foreign oil	22.1%	Drugs	22.3%
Media	–5.3%	Domestic oil	21.3%	Pollution control	20.9%
Tobacco	–8.1%	Tobacco	19.6%	Publishing	17.3%
Agriculture	–9.2%	Home finance	13.9%	Tobacco	16.3%
Oil services	–9.9%	Railroads	11.5%	Hotels	14.5%
Containers	–14.2%	Liquor distillers	10.5%	Liquor distillers	14.1%
Drugs	–14.7%	Mortgage finance	10.3%	Retailing	12.7%
WEAKEST STOCK GROUPS					
Liquor distillers	–38.8%	Supermarkets	–5.4%	Railroads	–22.4%
Office equipment	–40.1%	Coal	–6.4%	Forest products	–25.6%
Pollution control	–40.2%	Trucking	–6.6%	Foreign oil	–26.4%
Utilities	–41.5%	Shipping	–7.8%	Producer goods	–27.3%
Apparel	–43.0%	Media	–7.9%	Coal	–29.6%
Photography	–43.5%	Soap and cosmetics	–9.1%	Domestic oil	–31.6%
Beverages	–43.6%	Life insurance	–9.5%	Mining	–33.4%
Banking	–44.1%	Oil refining	–10.0%	Aluminum	–38.4%
Tire and rubber	–44.6%	Tire and rubber	–10.8%	Shipping	–46.1%
Real estate	–52.2%	Motor vehicles	–10.9%	Oil services	–47.0%
Mortgage finance	–76.1%	Office equipment	–12.5%	Steel	–49.6%
S&P 500	**–19.6%**		**8.9%**		**9.9%**

SOURCE BARRA

It's timely to look at how stock groups fared in the past three recessions. One industry that outperformed the market in all three: tobacco companies, whose sales held firm.

REAL ESTATE: A FEW GEMS IN THE ASH HEAP

SOME SAY PROPERTY VALUES HAVE HIT BOTTOM, BUT PREPARE TO SIFT. ■ BY KAREN NICKEL

IN INVESTING, bad news—even terrible news—nearly always has its good side. True, the office vacancy rate still hangs high at about 17%. As for illiquid limited partnerships, the question for many is not what to buy but how to get out. The investor's returns from most sectors of real estate are negative these days.

But that can mean opportunity. Over the past year, according to Green Street Advisors, a real estate research firm in Newport Beach, California, prices of equity real estate investment trusts (REITs) fell more than 25% on average, to levels reached in the 1987 stock market crash. The shares, which trade like stocks, are now priced at big discounts from the net asset value of the properties in REIT portfolios.

Many real estate experts think the worst is over. Says John Moran, portfolio manager of San Francisco's PRA Securities Advisors, an institutional real estate investment firm: "You could make a good case that we're at the bottom of the market, but the bottom could last for years." David Shulman, director of real estate research at Salomon Brothers, thinks property prices must sink another 15% before they will reflect true value. But for those willing to sift through the ashes, a few diamonds can be found.

REIT hunters should look for low-debt, well-managed properties and good occupancy rates. Moran likes five REITs that meet these criteria: **Washington Real Estate Investment Trust**, **United Dominion Realty Trust**, **REIT of California**, **Weingarten Realty Investors**, and **Western Investment Real Estate Trust**.

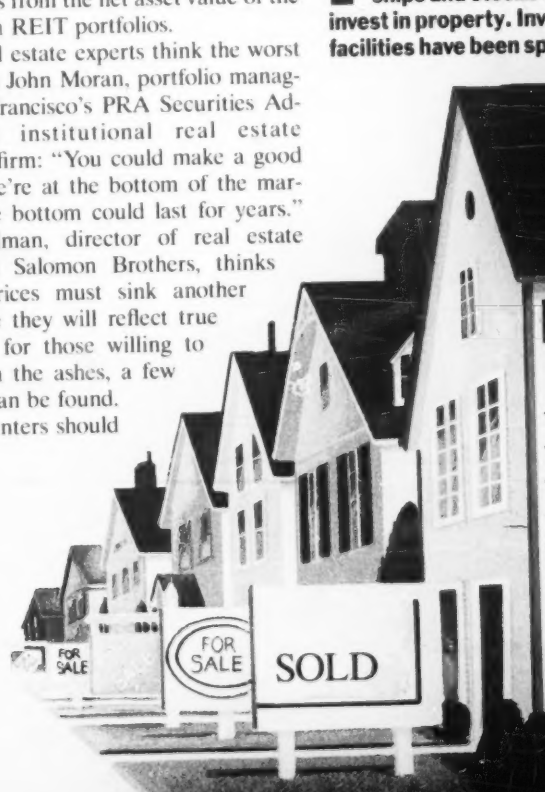
The first two invest in the iffy Southeast and Northeast regions, Moran says, but primarily hold shopping centers and apartments rather than overabundant office space. Houston's return to life will benefit the extremely well-managed Weingarten Realty, he adds, and the relative strength of West Coast real estate should bolster the bottom lines of REIT of California and Western Investment. All five REITs, Moran says, will boost their dividends over the coming year, fattening the average yield to more than 9%. Samuel Lieber, portfolio manager of top-performing **Evergreen Global Real Estate Equity Fund** in Purchase, New York, is especially high on Western.

Green Street's Michael Kirby champions health care REITs, particularly **Health Care Property Investors**. "This is the most conservatively managed health care REIT and turns in a good performance every year," he says. Health Care recently added to its portfolio of nursing homes by signing a deal to buy psychiatric properties at near fire-sale prices.

Lieber has hedged by buying stocks of industrial companies with real estate holdings. One of his current favorites is **I.G. Farbenindustrie**, a corporate fragment of the German chemical combine that was broken up after World War II. The company, traded on the German stock exchanges but available through a U.S. broker, owns eight blocks of prime real estate around East Berlin's main train station. Shares trade around $13.25, says Lieber, but are worth at least twice as much. F

REPORTER ASSOCIATE *Rebecca Lewin*

It's a miserable year for most real estate securities, including partnerships and stocks of companies that invest in property. Investments in health facilities have been spared heavy losses.



ROBERT CRAWFORD

REAL ESTATE'S SCARRED LANDSCAPE

SECTOR	TOTAL RETURN* 1987	1988	1989	1990 through 8/31
Shopping centers	3.7%	19.3%	9.7%	-13.4%
Office buildings	-9.2%	23.2%	2.2%	-30.2%
Commercial mortgages	-8.8%	-3.9%	-23.4%	-36.2%
Land development	-33.5%	30.2%	-20.7%	-42.9%
Industrial buildings	-21.6%	11.3%	-15.4%	-12.2%
Hotels	-24.7%	17.1%	-5.5%	-16.5%
Health care facilities	-1.5%	6.5%	12.8%	-4.4%
Residential mortgages	-21.8%	-7.0%	-7.3%	14.3%

*Including dividends

SOURCE: COHEN & STEERS CAPITAL MANAGEMENT

THE BEST MUTUAL FUNDS

IN A ROUGH PERIOD FOR STOCKS, PUNCTUATED BY THE CRASH AND THE KUWAIT INVASION, BOND FUNDS WERE WINNERS. ■ BY JOSHUA MENDES

SALMON swimming upstream to spawn face the same kind of challenge as stock pickers in the three years through August 31, 1990. Though it soared to new highs in early summer, the market finished downhill from where it started, moving from a lofty pre-crash level to a humbler post-Kuwait one. Not only did most classes of stock funds trail the total return on Standard & Poor's 500-stock index, which is not unusual, but the typical return was also miserable in absolute terms as well. All the more remarkable, then, that a few standout stock funds rang up impressive annual returns. Strong salmon, those.

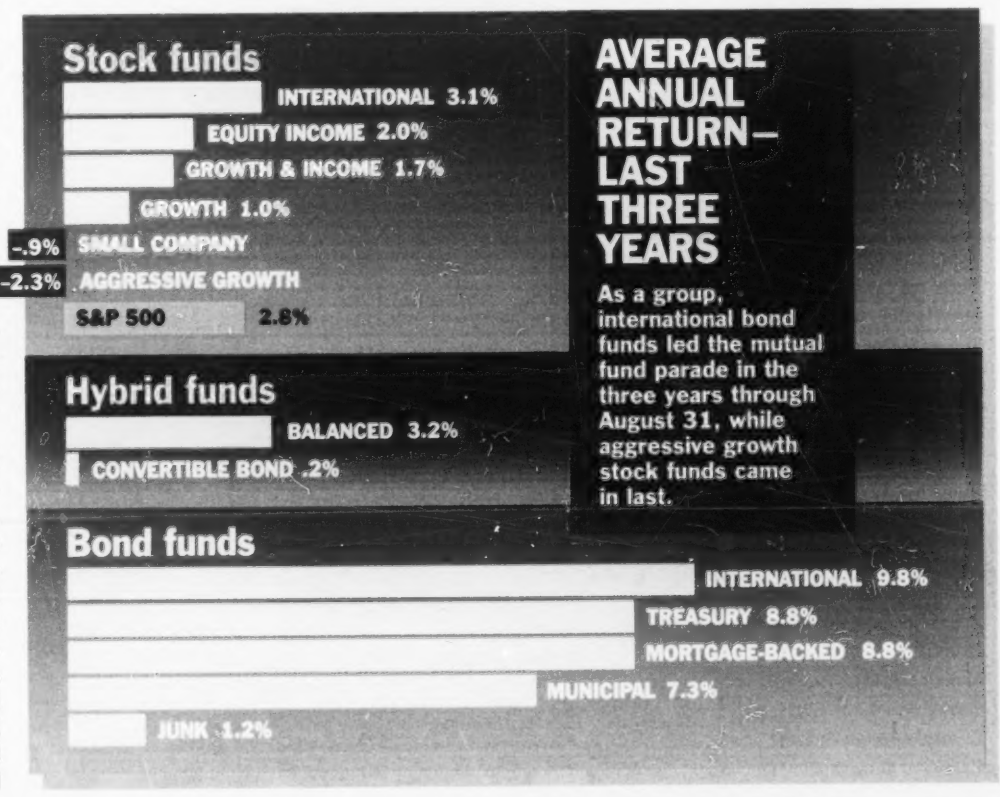
The lists that begin on the next text page—compiled for FORTUNE by Morningstar Inc., a mutual fund rating service based in Chicago—show the top-performing mutual funds in each of 13 categories during this period. The rankings are based on capital gains plus dividends or interest. The categories are generally arranged in descending order of risk, within several broader groupings.

Displayed first is the most nail-biting category of all, aggressive growth stock funds, which often use such techniques as shortselling and high leverage in the hope of winning big. At the other end of the spectrum are staid Treasury bond funds. In between come hybrid funds appealing to middle-of-the-road temperaments, namely balanced funds holding both stocks and bonds, and convertible bond funds. There are also specialty categories, such as funds investing in small companies, municipal bonds, and international stocks and bonds.

When it came to average performance by category during the three-year period, the race went to conservative funds that took few chances. International bond funds, roaming the globe for the best interest rates and helped by a general rise in foreign currencies against the dollar, did best. The ace in this group was **Paine Webber Master Global**, with an average yearly return of 14.7%.

The best-performing fund of all, however, was a stock fund that triumphed despite the period's handicaps. **Gabelli Growth** scored a 16.3% yearly return, miles ahead of the 1% average for all growth funds. Meanwhile, **Kaufmann Fund** grew at a respectable 10.4% clip even though aggressive growth funds were losing money at an average 2.3% a year. (To learn how the managers of Kaufmann and other top funds are investing now, see the interviews that follow.)

Not all mutual funds were considered in these rankings. To make the cut, they must



be diversified geographically and by industry. Thus, the **Japan Fund** and other single-country funds do not qualify, nor do sector funds that concentrate on one industry. Another requirement: The fund must have been managed by the same person during the entire three-year span. For funds with multiple managers, at least one must have stayed around. Finally, the fund must be open to new investors.

STELLAR PERFORMANCE is a powerful reason to invest in a fund. But you should also carefully consider costs, which are shown in the rankings along with other important data. Some funds charge a front-end sales load, not reflected in the performance figures on the lists, which can run as high as 8.5%. Investors in funds that bested the market, such as **Templeton Foreign** and **Oppenheimer Global**, more than recouped this charge. But when the fund performs poorly, the sales load adds insult to injury. A handful of funds have no front-end load but levy a charge when you exit.

Every fund has annual expenses—management fees, and in some cases, "12b-1" promotional fees allowed by the Securities and Exchange Commission rules. Together these average around 1% of assets, even in no-load funds. But the fees, which are accounted for in the performance data, can be as high as 3.5% at small funds with few investors.

Often disregarded by investors, but extremely significant, is a fund's portfolio turnover. This is a measure of how often a fund buys and sells stocks. For instance, a fund with 100% turnover changes its stock holdings completely over the course of a year. The brokerage commissions, not included in management fees, can nibble at a fund's performance. Worse, the investor can be hit with sizable taxes on capital gains distributions if the winnings are big. More attractive are funds like **Pasadena Fundamental Value**, which has achieved outstanding gains primarily on paper while holding its turnover to 24%.

Finally, you should examine the fund's level of risk. In measuring this, Morningstar looks at the variability of a fund's performance. If the monthly return often lags behind the return on 90-day Treasury bills, the fund is considered high risk. This does not necessarily mean that the fund is a bad investment—it may have roared past T-bills—but that it gives a bumpier ride. Because Morningstar watches fluctuations over several years, junk bonds don't yet show up as high risk despite their recent troubles, but only "above average" in most cases. If you like to sleep soundly, you may want to limit your selection to mutual funds with "low" or "below average" risk ratings.

Stellar performance is a powerful reason to invest in a fund. But you should also consider its costs.

Still another option is to abandon the idea of trying to beat the market at all. **Vanguard Index 500**, a no-load fund managed by Vanguard Group in Valley Forge, Pennsylvania, and not on these lists, is designed to shadow the S&P 500. Its three-year average return of 2.5% trailed the index a bit, but a minuscule management fee—recently 0.21%—accounts for most of the discrepancy. The risk level is just what you'd expect: "average." F

REPORTER ASSOCIATE *Rahul Jacob*

THE TOP FUNDS BY CATEGORY

MUTUAL FUND TELEPHONE	AVG. ANNUAL RETURN[1] 3 years	 1 year	ASSETS 6/30/90 in millions	FEES Sales load	 Annual expenses	PORTFOLIO TURNOVER	RISK	MANAGER
AGGRESSIVE GROWTH STOCK FUNDS								
Kaufmann 800-237-0132	**10.4%**	-8.5%	**$53**	None	3.50%	**202%**	Above avg.	H. Utsch, L. Auriana
Delaware Group Value 800-523-4640	**6.0%**	-15.7%	**$10**	4.75%	1.72%	**59%**	Above avg.	Edward Trumpbour
Fidelity Cap. Apprec. 800-544-8888	**5.1%**	-14.0%	**$2,074**	2.00%	1.36%	**62%**	Below avg.	Thomas Sweeney
Thomson Opportunity 800-628-1237	**2.8%**	-9.1%	**$44**	5.00%[2]	1.70%	**153%**	Above avg.	Don Chiboucas
General Aggressive Growth 800-645-6561	**2.3%**	-3.9%	**$49**	None	1.16%	**130%**	Average	Tom Frank
Putnam Voyager 800-225-1581	**2.1%**	-10.1%	**$804**	5.75%	1.25%	**71%**	Above avg.	Matthew Weatherbie
SLB Aggressive Growth 212-528-2744	**1.7%**	-6.5%	**$107**	5.00%	1.25%	**8%**	Above avg.	R. Freeman, E. Fried
AIM Constellation 800-347-1919	**1.0%**	-7.9%	**$129**	5.50%	1.71%	**149%**	High	H. Hutzler, J. Schoolar
MetLife-S.S. Capital Apprec. 800-882-0052	**0.9%**	-13.3%	**$59**	4.50%	1.50%	**223%**	Above avg.	Frederick Kobrick
Founders Special 800-525-2440	**0.6%**	-17.6%	**$71**	None	1.19%	**151%**	Above avg.	Bjorn Borgen et al.
GROWTH STOCK FUNDS								
Gabelli Growth 800-422-3554	**16.3%**	-3.4%	**$199**	None	1.85%	**48%**	Below avg.	Elizabeth Bramwell
Pasadena Fundmtl. Value 800-882-2855	**14.3%**	-1.6%	**$5**	5.50%	2.30%	**24%**	Low	Roger Engemann
Janus 800-525-3713	**10.3%**	-5.0%	**$1,246**	None	0.92%	**205%**	Below avg.	James P. Craig
Mathers 800-962-3863	**9.2%**	11.7%	**$244**	None	1.01%	**303%**	Low	H. Van der Eb Jr.
Gabelli Asset 800-422-3554	**8.6%**	-10.7%	**$381**	None	1.26%	**49%**	Low	Mario J. Gabelli
Carnegie-Cappiello Trust 800-321-2322	**8.3%**	-8.1%	**$78**	4.50%	1.59%	**52%**	Average	Frank Cappiello
Pasadena Growth 800-882-2855	**8.2%**	-12.1%	**$52**	5.50%	2.30%	**94%**	Above avg.	Roger Engemann

[1]Performance is net of annual expenses and brokerage costs but excludes sales loads.
[2]Deferred sales charge, which declines over time.

SOURCE: MORNINGSTAR INC.

MUTUAL FUND TELEPHONE	AVG. ANNUAL RETURN[1] 3 years	1 year	ASSETS 6/30/90 in millions	FEES Sales load	Annual expenses	PORTFOLIO TURNOVER	RISK	MANAGER
GROWTH STOCK FUNDS cont'd								
G.T. America Growth 800-824-1580	**8.1%**	2.9%	**$68**	4.75%	1.94%	**133%**	Above avg.	Scott Fearon
SteinRoe Special 800-338-2550	**8.1%**	−1.1%	**$451**	None	0.75%	**85%**	Average	R. Weiss, C. Murphy
IDEX 800-237-3055	**7.7%**	−4.6%	**$93**	8.50%	1.40%	**97%**	Average	Thomas Marsico
GROWTH & INCOME STOCK FUNDS								
Cigna Value 800-572-4462	**9.4%**	4.2%	**$91**	5.00%	1.00%	**152%**	Below avg.	James Giblin
Rightime Blue Chip 800-242-1421	**7.3%**	3.8%	**$123**	4.75%	2.56%	**233%**	Low	D. Rights, A. Soslow
SBSF Growth 800-422-7273	**6.8%**	3.8%	**$100**	None	1.13%	**44%**	Low	Louis Benzak
FPA Perennial 800-421-4374	**6.6%**	−2.2%	**$59**	6.50%	1.20%	**27%**	Low	Chris Linden
AIM Charter 800-347-1919	**6.4%**	7.4%	**$90**	5.50%	1.37%	**131%**	Below avg.	Julian Lerner
General Securities 800-331-4923	**6.3%**	−1.5%	**$20**	5.00%	1.39%	**54%**	Low	Jack Robinson
U.S. Boston G&I 617-259-1144	**5.7%**	−3.6%	**$37**	1.00%[3]	1.85%	**92%**	Average	J. Kimball Dow
Plymouth I&G 800-522-7297	**5.2%**	−5.4%	**$62**	4.75%	1.88%	**257%**	Low	Robert Hober
Merrill Lynch Cap. Apprec. A 800-367-3863	**5.2%**	−0.3%	**$945**	6.50%	0.78%	**85%**	Low	Ernest Watts
Copley 800-424-8570	**4.7%**	−4.2%	**$30**	None	1.86%	**3%**	Low	Irving Levine
EQUITY INCOME STOCK FUNDS								
Lindner Dividend 314-727-5305	**7.4%**	−1.4%	**$153**	None	0.87%	**2%**	Low	Eric E. Ryback
United Income 800-366-5465	**7.2%**	−8.5%	**$1,742**	8.50%	0.65%	**61%**	Below avg.	Russell Thompson
Capital Income Builder 800-421-0180	**7.0%**	0.5%	**$222**	5.75%	1.11%	**16%**	Low	Stephen Bepler et al.
Financial Industrial Income 800-525-8085	**6.8%**	0.0%	**$572**	None	0.79%	**124%**	Below avg.	John Kaweske
Oppenheimer Eq.-Inc. 800-525-7048	**4.6%**	−2.5%	**$1,329**	8.50%	0.85%	**116%**	Low	D. Jarmusz, S. Wilder
Keystone America Eq.-Inc. 800-343-2898	**3.9%**	−2.4%	**$24**	4.00%[4]	2.00%	**50%**	Below avg.	Walter McCormick
Founders Eq.-Inc. 800-525-2440	**3.8%**	−6.7%	**$15**	None	1.55%	**85%**	Low	Bjorn Borgen et al.
T. Rowe Price Eq.-Inc. 800-638-5660	**3.5%**	−14.1%	**$1,002**	None	1.14%	**18%**	Below avg.	T. Broadus, B. Rogers
SteinRoe Total Return 800-338-2550	**2.9%**	−3.2%	**$140**	None	0.88%	**93%**	Low	Robert Christensen
American National Income 800-231-4639	**2.7%**	−1.4%	**$74**	8.50%	1.17%	**15%**	Below avg.	James McGlynn
SMALL COMPANY STOCK FUNDS								
Alger Small Capitalization 800-992-3863	**12.0%**	−1.8%	**$31**	5.00%[2]	3.25%	**441%**	Above avg.	David Alger
Founders Frontier 800-525-2440	**11.6%**	−14.1%	**$71**	None	1.50%	**198%**	Average	Bjorn Borgen et al.
Janus Venture 800-525-3713	**8.9%**	−4.2%	**$232**	None	1.28%	**219%**	Below avg.	James P. Craig
Nicholas Ltd. Edition 414-272-6133	**5.4%**	−9.2%	**$72**	None	1.12%	**19%**	Below avg.	Albert Nicholas
Baron Asset 800-992-2766	**5.0%**	−26.0%	**$55**	2.00%[2]	1.78%	**94%**	Average	Ronald Baron
Columbia Special 800-547-1707	**4.7%**	−13.2%	**$142**	None	1.36%	**129%**	Above avg.	Alan Folkman
Twentieth Century Giftrust 800-345-2021	**4.0%**	−11.6%	**$33**	None	1.00%	**132%**	High	James Stowers et al.
Skyline Special Equities 800-458-5222	**3.7%**	−5.1%	**$26**	3.85%	1.60%	**90%**	Average	William Dutton
Twentieth Century Ultra 800-345-2021	**3.5%**	−6.7%	**$398**	None	1.00%	**166%**	High	James Stowers et al.
Hartwell Emerging Growth 800-624-3863	**3.3%**	−0.4%	**$29**	4.75%	2.50%	**136%**	High	John Hartwell
INTERNATIONAL STOCK FUNDS								
Templeton Foreign 800-237-0738	**11.6%**	16.3%	**$881**	8.50%	0.81%	**17%**	Low	Mark Holowesko
Ivy International 800-235-3322	**8.7%**	4.3%	**$80**	None	1.80%	**23%**	Below avg.	Hakan Castegren
Oppenheimer Global 800-525-7048	**8.4%**	21.0%	**$809**	8.50%	1.90%	**48%**	Average	Kenneth Oberman
Scudder Global 800-225-2470	**8.3%**	1.5%	**$257**	None	1.98%	**58%**	Below avg.	William Holzer
EuroPacific Growth 800-421-0180	**8.0%**	10.6%	**$805**	5.75%	1.24%	**26%**	Below avg.	Stephen Bepler et al.
First Investors Global 800-423-4026	**7.9%**	11.4%	**$246**	6.90%	2.05%	**155%**	Average	D. Duane, W. Higgins
G.T. International Growth 800-824-1580	**7.5%**	6.1%	**$348**	4.75%	1.85%	**82%**	Below avg.	Christian Wignall
Vanguard World International 800-662-7447	**5.7%**	5.3%	**$828**	None	0.64%	**50%**	Average	Richard Foulkes
Scudder International 800-225-2470	**5.7%**	7.2%	**$935**	None	1.18%	**49%**	Average	Nicholas Bratt
T. Rowe Price Int'l Stock 800-638-5660	**5.4%**	6.4%	**$1,163**	None	1.05%	**48%**	Average	Martin Wade et al.

[1] Performance is net of annual expenses and brokerage costs but excludes sales loads.
[2] Deferred sales charge, which declines over time.
[3] Redemption fee.
[4] Includes 2% deferred sales charge.

MUTUAL FUND TELEPHONE	AVG. ANNUAL RETURN 3 years	 1 year	ASSETS 6/30/90 in millions	FEES Sales load	 Annual expenses	PORTFOLIO TURNOVER	RISK	MANAGER
BALANCED FUNDS								
National Total Income 800-356-5535	**6.7%**	−5.3%	**$224**	5.75%	1.22%	**19%**	Below avg.	John Doney
Pax World 800-767-1729	**5.9%**	7.0%	**$108**	None	1.10%	**37%**	Average	Anthony Brown
Phoenix Balanced 800-243-4361	**5.7%**	5.5%	**$489**	6.90%	0.88%	**144%**	Below avg.	Patricia Bannan
Vanguard STAR 800-662-7447	**4.7%**	−7.0%	**$1,077**	None	0.43%	**7%**	Average	(group of funds)
Dodge & Cox Balanced 415-434-0311	**4.7%**	−1.6%	**$62**	None	0.72%	**12%**	Average	Joseph Fee et al.
Mass. Finan. Total Return 800-225-2606	**4.4%**	−3.0%	**$748**	4.75%	0.86%	**53%**	Average	Richard Dahlberg
American Balanced 800-421-0180	**4.1%**	−5.0%	**$310**	5.75%	0.78%	**37%**	Average	George Miller et al.
Eaton Vance Investors 800-225-6265	**3.9%**	0.1%	**$205**	4.75%	0.92%	**56%**	Average	M. Dozier Gardner
Strong Investment 800-368-3863	**3.9%**	−2.6%	**$230**	1.00%	1.30%	**236%**	Below avg.	R. Strong, W. Corneliuson
Wellington 800-662-7447	**3.8%**	−6.0%	**$2,331**	None	0.42%	**30%**	Average	Vincent Bajakian
CONVERTIBLE BOND FUNDS								
Convertible Securities 800-356-2805	**5.5%**	−11.7%	**$29**	4.50%	0.97%	**54%**	Average	J. Madden, M. Durbiano
Phoenix Convertible 800-243-4361	**4.7%**	5.9%	**$152**	6.90%	1.02%	**143%**	Below avg.	John G. Martin
Pru-Bache IncomeVert. + B 800-225-1852	**3.1%**	−8.2%	**$513**	5.00%[2]	2.03%	**91%**	Average	Terry Hamacher
American Capital Harbor 800-421-5666	**2.9%**	−2.0%	**$377**	5.75%	0.76%	**94%**	Average	James Behrman
Lord Abbett Bond-Deb. 800-874-3733	**2.8%**	−5.4%	**$594**	4.75%	0.59%	**124%**	Below avg.	Robert S. Dow
JUNK BOND FUNDS								
Plymouth High-Yield 800-522-7297	**8.2%**	1.7%	**$16**	4.75%	1.10%	**115%**	Above avg.	Margaret Eagle
Merrill Lynch High-Income A 800-637-3863	**6.1%**	1.9%	**$542**	4.00%	0.68%	**56%**	Average	Vincent T. Lathbury
Investment Series 800-245-4770	**4.7%**	−4.6%	**$5**	5.75%	1.14%	**38%**	Above avg.	J. Madden, M. Durbiano
Financial Bond High-Yield 800-525-8085	**4.4%**	−4.1%	**$50**	None	0.83%	**53%**	Above avg.	William Veronda
Cigna High-Yield 800-833-0951	**4.2%**	−6.4%	**$250**	5.00%	1.10%	**36%**	Above avg.	Alan Petersen
MORTGAGE-BACKED BOND FUNDS								
SFT U.S. Government 800-523-2044	**11.2%**	11.0%	**$31**	5.00%	1.32%	**20%**	Low	Andrew Groshans
Smith Barney Mthly. Gov't 800-544-7835	**10.3%**	8.2%	**$21**	4.00%	0.46%	**11%**	Average	Ellen Bermel
Vanguard Fixed-Inc. GNMA 800-662-7447	**10.3%**	8.8%	**$2,271**	None	0.30%	**9%**	Average	Paul Sullivan
Benham GNMA Income 800-472-3389	**10.1%**	8.3%	**$310**	None	0.75%	**433%**	Average	Randy Merk
Investors Preference 800-322-5353	**10.0%**	9.2%	**$40**	4.00%	0.60%	**5%**	Below avg.	Regis Dompka
TREASURY BOND FUNDS								
Dreyfus U.S. Gov't 800-648-9048	**8.9%**	3.2%	**$24**	None	1.32%[3]	**40%**	Above avg.	Barbara Kenworthy
Vanguard U.S. Treasury 800-662-7447	**8.7%**	0.6%	**$628**	None	0.28%	**83%**	Above avg.	Ian MacKinnon
Principal Preserv. Gov't 800-826-4600	**8.5%**	6.3%	**$29**	4.50%	1.20%	**142%**	Average	Vern Van Vooren
Dreyfus U.S. Gov't Interm. 800-648-9048	**8.4%**	7.2%	**$62**	None	0.80%	**6%**	Average	Barbara Kenworthy
Federated Interm. Gov't 800-245-5000	**8.2%**	7.9%	**$894**	None	0.51%	**166%**	Below avg.	Roger A. Early
MUNICIPAL BOND FUNDS								
UST Master Tax-Exempt L-T 800-233-1136	**11.2%**	5.6%	**$35**	4.50%	0.85%	**437%**	Below avg.	Kenneth McAlley
Alliance Muni. Income Nat'l 800-227-4618	**9.9%**	6.0%	**$181**	4.50%	0.56%	**216%**	Below avg.	Susan Peabody
Rochester Municipals 716-442-5500	**9.7%**	8.0%	**$156**	4.00%	0.75%	**35%**	Low	Ronald Fielding
Financial Tax-Free 800-525-8085	**9.0%**	4.6%	**$179**	None	0.74%	**27%**	High	William Veronda
United Municipal Bond 816-283-4122	**8.8%**	3.6%	**$653**	4.25%	0.57%	**226%**	High	John Holiday
INTERNATIONAL BOND FUNDS								
Paine Webber Master Global 800-647-1568	**14.7%**	19.6%	**$1,105**	5.00%[2]	1.95%	**124%**	Below avg.	Nimrod Fachler
Van Eck World Income 800-221-2220[4]	**14.0%**	20.0%	**$43**	4.75%	1.60%	**290%**	Below avg.	K. Buescher, D. Kenerson
Mass. Financial Int'l 800-225-2606	**12.8%**	17.8%	**$122**	4.75%	1.64%	**282%**	Average	Leslie J. Nanberg
M. Lynch Retrmt. Global B 800-637-3863	**11.3%**	16.0%	**$264**	4.00%[2]	1.78%	**188%**	Above avg.	D. Water, L. Teitelbaum
T. Rowe Price Int'l Bond 800-638-5660	**7.0%**	13.5%	**$306**	None	1.14%	**293%**	High	David Boardman

[1] Performance is net of annual expenses and brokerage costs but excludes sales loads.
[2] Deferred sales charge, which declines over time.
[3] Currently absorbed by the management company.
[4] 212-687-5200 in New York State.

MUNIS: THE LAST OF THE TAX HAVENS

WITH HIGHER TAXES BREWING FROM CAPITOL HILL TO CALIFORNIA, MUNICIPAL BONDS LOOK BETTER THAN EVER.

BY SUSAN E. KUHN

YOUR TAX RATES now may be the lowest you will ever see. Fiscal crises from New York to California suggest that they won't last much longer. Faced with likely increases, and with many of the tax shelters of yore a distant memory, where can an investor look for refuge from the taxman's bite? About the best answer going: municipal bonds, which pay interest that goes into no one's pocket but your own.

Municipals, those boring little bonds you and your fellow citizens have been approving lately for new sewers and bridges and prisons, have been magnificent for months and are likely to remain so. Munis have consistently offered yields equal to 80% or more of those on Treasury securities. At that spread, anyone in the 28% or 33% federal tax bracket will save money owning a municipal.

The tax fever gripping many legislatures makes munis only more attractive. In the fiscal year just ended, 23 states raised taxes, ten of them socking it to personal income. Next year could be worse. Says Corina Eckl of the National Conference of State Legislatures, which tracks state budgets: "States have already made major cuts and used one-time revenue boosts. Many got by this year, but they may have to raise taxes next year."

Even if investors escape tax swipes from their state, they may have to dodge higher taxes from Washington. Wealthy residents of high tax states like California and Arizona could be threatened if the proposal to limit itemized deductions, such as state and local taxes, is adopted. Observes Peter Allegrini, a municipal bond portfolio manager

Bonds issued to maintain the Benjamin Franklin Bridge into Philadelphia are tax-free in Pennsylvania and New Jersey.

NINA BARNETT

for Fidelity: "When George Bush came out saying, 'We're raising taxes,' munis gained a lot of favor."

Concludes Allegrini: "Demand will be very, very strong and will outpace supply." But supply there will be, enough to give investors a healthy measure of choice. Those same big, fiscally unhealthy states Eckl talks about are also big issuers of municipal bonds. California, New York, and Texas, each of which may have to raise taxes, together account for more than one-quarter of all munis issued annually.

ALAN D. LEVENSON

AMT bonds finance a new runway for Las Vegas's McCarran airport.

BEFORE YOU BUY any muni, it's important to know your state's rules on the taxability of interest income from municipal bonds. Most states exempt interest earned on local bonds but tax the interest on out-of-state issues. Indiana, New Mexico, and Utah are particularly generous: They extend the tax break to all munis. Illinois, Iowa, Oklahoma, and Wisconsin are probably the stingiest, exempting only certain in-state bonds.

Knowing a bit about the types of muni bonds available can make a difference in assessing the riskiness of your investment. General obligation, or GO, bonds are usually safer, so they yield from 0.15 to two percentage points less than revenue bonds. That's because GO bonds are backed by the taxing authority of a city or state, while revenue bonds depend upon income streams from a particular project—a new airport, for example. Apart from the bonds of fiscally strapped Louisiana and Massachusetts, all state GO bonds carry single-A or better ratings. Eleven states have triple-A ratings. But don't count revenue issues out because of risk. The bonds issued by the Delaware River Port Authority, for instance, are triple-A because they are backed by tolls on the bridges connecting New Jersey and Pennsylvania—a revenue source unlikely to dry up.

One way of reducing risk is to buy an insured bond, whose interest and principal are guaranteed in the case of default. In less than ten years, new issues of insured bonds have ballooned from $2 billion a year to $31 billion. In the process, the yield you give up to own an insured bond of the same rating has declined, to about 0.1%. Says John Sebastian of the Chicago brokerage firm Clayton Brown & Associates: "Insured bonds are a good buy, and owning one is like having a belt *and* suspenders."

In the year just ended, 23 states raised taxes, ten socking personal income. Next year could be worse.

Income from some revenue bonds, particularly those issued to finance airport construction or the building of waste-to-energy plants, are subject to the 21% alternative minimum tax, or AMT. That tax, you'll recall, requires you to add back to your gross income a host of "preference items," such as gains on incentive stock options, and disallowed deductions, such as state and local taxes. If the 21% tax on this adjusted gross income is greater than the tax you would normally fork over, you have to pay the AMT. Because most investors don't want to even *think* about that possibility, notes Steven Hueglin of the New York brokerage firm Gabriele Hueglin & Cashman, issuers often have to jack up the yield on AMT bonds to sell them.

So how to take the investment plunge into municipals? If you can assemble a $50,000 portfolio of up to five issues that you intend to hold to maturity, you may want to buy bonds on your own rather than to buy into a muni mutual fund. In states like Illinois you have little choice: Because the state exempts only certain issues, fund managers can't make a go of it.

IF YOU DO go out on your own, be warned, though: Selling *any* municipal bond before its time gets tricky. The market for munis is less liquid than the one for, say, Treasuries. Obtaining financial information about muni issuers can be difficult, and many issuers are small localities that come to the market infrequently. Some issuers, like the Power Authority of the State of New York, are familiar faces, so their bonds are always good bets if you think you might have to cash out early. But if you sell a block of munis from a little-known issuer, you may be able to realize only 95% of the face value.

The easiest way to invest in munis, if you don't mind paying some fees, is to buy in through a mutual fund. National funds that buy bonds from any state are fine if you are most concerned with ducking federal taxes,

REPORTER ASSOCIATE *Alison L. Sprout*

but if you want the state and local pass-through, a state bond fund is obviously the way to go.

In states that have high taxes and plenty of issuers, you'll typically find an abundance of funds to choose from. Lipper Analytical Services tracks nearly 300 single-state funds in 30 states. California and New York lead the list, with 58 and 49 funds, respectively. It pays to look around, not just for yield but also to save on costs. Mutual funds usually charge an annual management fee of about 0.5%, but sales charges can range from nothing to 8.5%. Sponsors of no-load single-state funds include big names such as Vanguard, Fidelity, Dreyfus, Scudder Stevens & Clark, and T. Rowe Price Associates.

Finding a fund manager for your state is getting easier all the time: Some 100 firms sponsor single-state muni bond funds nowadays. Franklin Fund of San Mateo, California, started its municipal department in 1977 and now offers portfolios in 24 states, charging a maximum sales load of 4%. Its largest muni fund, the $11 billion Franklin California Tax-free Income Fund, is the biggest muni fund in the country, and its average 12-month yield, 7.5%, tops the list for the state. Californians in the 28% federal bracket seeking sunny yields like that in a CD would have to find a bank offering 11.5%.

ANOTHER GOOD BET for single-state funds is J&W Seligman of New York, which offers 19 funds in 18 states. Notes Thomas G. Moles, senior portfolio manager for munis: "When we started in 1983, most muni players were in California and New York. We looked at other state tax scales and said, 'Why wouldn't it work in Massachusetts, Minnesota, and Maryland?' " South Carolinians can now benefit from that pioneering spirit. Seligman's fund in that state charges a maximum 4.75% load and yields 6.6%, for a CD-equivalent yield of 9.9%.

Many fund managers try to achieve diversification by mixing high yields (say, from AMT issues) with high quality (from top-notch or insured bonds). Arranging a cornucopia is easy in large states like California, but more difficult in smaller or less populous states. To provide safety in troubled states (think Massachusetts), many firms offer insured funds, which hold only bonds that are insured by triple-A financial guaranty companies.

Another alternative is to investigate unit investment trusts, which sell a fixed, unmanaged package of securities. UITs are forever wedded to the price fluctuations of the original bonds purchased. They have existed since the 1950s, so they may be more available than muni mutual funds. Investors in a UIT are typically charged an up-front sales commission of 4% to 6%, followed by annual trustee fees, which amount to 0.1%. Whichever route you choose, you should still come out ahead of the taxman. F

HOW MUNIS STACK UP STATE BY STATE

STATE	TOP STATE TAX RATE	STATE MUNI YIELD	To match the muni yield, you'd need to get the following yields from . . . TREASURIES	CDs
Alabama	5.0%	7.3%	10.1%	10.7%
Arizona	8.0%	6.9%	9.6%	10.4%
Arkansas	7.0%	7.1%[4]	9.9%	10.6%
California	9.3%	6.7%	9.3%	10.3%
Colorado	5.0%	7.0%	9.7%	10.2%
Connecticut	14.0%	6.8%	9.4%	11.0%
Delaware	7.7%	6.7%[4]	9.3%	10.4%
Florida	None	7.6%	10.6%	10.6%
Georgia	6.0%	6.6%	9.2%	9.8%
Hawaii	10.0%	6.6%	9.2%	10.2%
Idaho	8.2%	6.2%	8.6%	9.7%
Indiana	3.4%	7.4%	10.3%	10.6%
Kansas	6.0%[5]	6.9%[4]	9.6%	10.5%
Kentucky	6.0%	6.6%	9.2%	9.8%
Louisiana	6.0%	6.9%	9.6%	10.2%
Maine	8.5%	6.8%[4]	9.4%	10.3%
Maryland	7.5%[5]	6.5%	9.0%	10.1%
Massachusetts	6.0%[6]	6.9%	9.6%	10.2%
Michigan	4.6%	6.7%	9.3%	9.8%
Minnesota	8.5%	6.6%	9.2%	10.4%
Missouri	6.0%	6.8%	9.4%	10.1%
Nebraska	6.4%	6.6%[4]	9.2%	10.1%
New Jersey	7.0%[7]	6.8%	9.4%	10.2%
New York	7.9%	6.7%	9.3%	10.1%
North Carolina	7.0%	6.6%	9.2%	9.9%
North Dakota	3.9%[5,8]	7.2%	10.0%	10.4%
Ohio	6.9%	6.7%	9.3%	10.0%
Oregon	9.0%	6.2%	8.6%	9.5%
Pennsylvania	2.1%	7.0%	9.7%	9.9%
Rhode Island	6.4%[8]	6.7%	9.3%	9.9%
South Carolina	7.0%	6.5%	9.0%	9.7%
Tennessee	6.0%	6.7%	9.3%	9.9%
Texas	None	7.5%	10.4%	10.4%
Vermont	7.8%[8]	6.7%[4]	9.3%	10.0%
Virginia	5.8%	6.5%	9.0%	9.6%
West Virginia	6.5%	6.7%	9.3%	10.0%

[1]Top tax rate (rounded) for interest income in 1990, as of August 31.
[2]Average 12-month yield through August for single-state municipal bond funds tracked by Lipper Analytical Services.
[3]Calculated by Coopers & Lybrand. Assumes a 28% tax rate.
[4]Average 12-month yield through August for single-state unit investment trusts sponsored by Clayton Brown & Associates.
[5]Applies to most taxpayers. Alternate rates may apply.
[6]Rate applies only to in-state CDs.
[7]Effective rate for 1991.
[8]State rates are derived from a percentage of federal taxes paid.

THE NEW RULES OF SUING A BROKER

SURPRISE! SETTLING DISPUTES THROUGH ARBITRATION RATHER THAN IN COURT WORKS OUT WELL FOR INVESTORS. ■ BY LLOYD S. CLAREMAN

HOW MANY industries can you name in which large, well-financed corporations have, with much fanfare, made it as easy and inexpensive as possible for the public to sue them? I can think of just one: the securities industry.

The key is in those agreements that brokerage firms frequently make you sign requiring that any disputes between you and the firm be arbitrated rather than taken to court. Oddly, investors still widely believe that these agreements deprive them of some immensely valuable right. To this day, even in the face of Supreme Court rulings upholding the validity of such agreements, unhappy investors labor mightily to get into court and away from arbitration. The financial press doesn't help, often describing judicial decisions compelling arbitration as "setbacks" for the investing public.

This prevailing view of arbitration—as conducted under today's rules, not those of just a few years ago—is misguided. Anyone who thinks he is automatically better off litigating a securities case in court should consider the Florida doctor who sued his brokerage firm when a $150,000 tax shelter investment didn't live up to his expectations. After *four years* of pretrial proceedings, the case finally made it to trial. The jury, fundamentally unsympathetic to the wealthy plaintiff, ruled against him on every claim. His lawyers had racked up fees of over $100,000—and under Florida law he was liable to the brokerage firm for *its* legal fees. You think a jury would be more likely to take pity on you than on a wealthy doctor? Consider the wheelchair-bound paraplegic who sued his broker in Florida a couple of years ago and also lost and had to pay his broker's lawyers.

No one can know what the results would have been had either case been arbitrated. But as an attorney who has handled securities cases in both arenas, I believe that instead of attempting to avoid arbitration, or bemoaning it, aggrieved investors should learn how to exploit its many advantages.

An important reason many investors resist securities arbitration is that they remember it the way it used to be, which was emphatically a bad bet for them. While only one of the three arbitrators on the panel that decided a customer's case would come from the securities industry, the other two "public" arbitrators were apt to be people with close industry ties. Punitive damages were practically unheard of, and a customer had virtually no prehearing access to information in the brokerage firm's possession ("smoking gun" memos and other internal documents) that he might need to present an effective case. Another reason brokers preferred arbitration: It was easier and cheaper for their in-house lawyers to handle. The customer could choose between arbitration and the courts, but since arbitration under these conditions was so favorable to brokerage firms, the firms tried to get *every* case into that forum.

TIMOTHY GREENFIELD-SANDERS

Author Clareman: Most investors don't know that arbitration today is quick, inexpensive, and fair.

The industry seemed to get its way in mid-1987 when the Supreme Court ruled that clauses in standard customer-broker agreements requiring arbitration of disputes are enforceable. But this "victory" focused attention on arbitration and widened the view that it could be made a lot fairer. Soon after, the Securities and Exchange Commission suggested to the industry that it adopt a number of reforms. The industry complied.

As a result of these reforms, the effects of which are just beginning to be felt, most of the investor's disadvantages in arbitration have been swept away. One of the arbitrators on a panel may still be from the securities industry, but the public members must be what their name implies; anyone with a meaningful tie to the industry is disqualified or must be counted as the industry arbitrator. In practice, arbitrators are often business people, lawyers, and retirees from these professions. Increasing numbers of investors are asking for and being awarded punitive damages, notwithstanding con-

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flicting legal decisions about the power of arbitrators to award such damages. Investors get more prehearing access to brokerage firms' data. More pro-investor reforms are constantly being proposed.

RESULT: Arbitration today offers more advantages than disadvantages to aggrieved investors. A dissatisfied customer who might not otherwise have thought of suing, or who would have shunned the prospect of getting involved in an arduous litigation, can now contemplate going to a reasonably evenhanded arbitration in which all he needs to do is file a complaint and then show up for the hearing. To learn how to initiate action, he can just call the arbitration department of any of the exchanges or other organizations specified in his customer's agreement. Hearings are held in virtually every major U.S. city. Cases are handled so quickly—the typical claimant has to wait only six to eight months for his case to be heard—that legal fees don't have much chance to build up. Most investors can have their cases handled on a contingent-fee basis, paying their lawyers only if they win. A victorious investor usually gets a check in about 30 days—appeals are rare and almost never successful.

Despite all the public resistance, little hard evidence exists to suggest that the investor's results in arbitration are any worse than those he gets in court—and he certainly gets them faster and at vastly lower expense. It is not widely appreciated that securities cases filed in the courts are often dismissed before they get off the ground. A complaint generally has to survive an initial motion to dismiss, usually because the allegations are claimed to be substantively or technically deficient. If the case gets past that stage—and many do not—years of pretrial discovery may ensue. At the conclusion will be another round of motions aimed at getting the case dismissed for lack of substance. Only if it survives these obstacles will the case get before a jury. And a favorable outcome with the jury, if it occurs, may always be set aside by the judge or reversed on appeal in the distant future.

REPORTER ASSOCIATE *Sandra Kirsch*

Arbitration has no such hurdles. It is almost unprecedented for a case to be dismissed without a full hearing. Cases that in court would not survive an initial dismissal motion due to some clear legal defect (expiration of the statute of limitations, for example) may nonetheless result in an arbitration award if the panel of arbitrators, after hearing all the evidence, decides that granting an award is the right thing to do. No appellate court is waiting in the wings to second-guess that judgment, and no reasons for it need even be given.

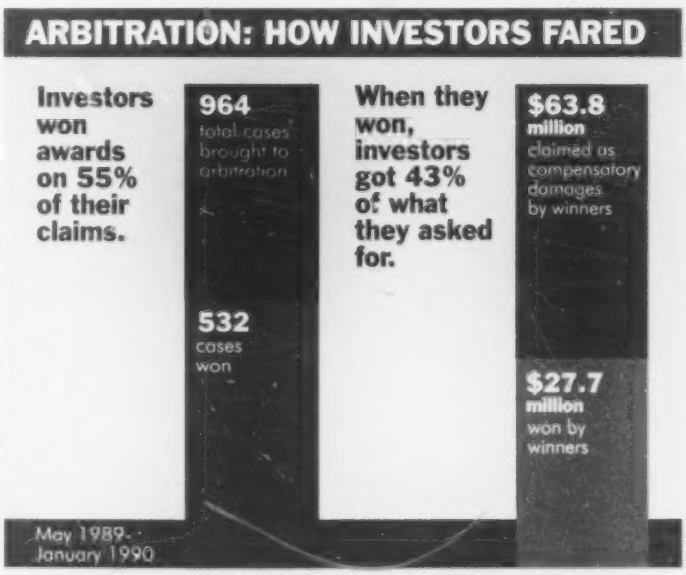
Arbitration panels have an inherent tendency to reach a compromise that gives the investor something.

The results can be surprising. A Houston doctor with extensive business experience (and a history of speculating in the securities markets) opened a brokerage account a couple of years ago with $100,000 in cash. He signed a number of forms giving his broker control of the account and stated in writing that he wanted the broker to run a high-risk trading account, as opposed to taking a conservative buy-and-hold approach. Over 18 months the account lost $20,000, mainly due to commissions on the aggressive trading the investor had authorized. He received account statements every month showing all trades made on his behalf and the losses as they were being incurred, and he didn't object. He even signed so-called activity letters, when asked to do so by the brokerage firm, in which he specifically approved the trades made in his account.

Yet after closing the account, the investor brought a claim in arbitration asserting that the broker had engaged in inappropriate and excessive trading. The hearing lasted just one day and included a presentation by the brokerage firm of the numerous forms and approvals that the investor had signed. When it was over, the arbitrators awarded him $95,000, representing all the commissions earned by the broker over the life of the account, even though the investor's losses were only $20,000. The odds are high that this claim, if filed in court and subjected to attack under conventional legal principles, would have been dismissed by a judge before it ever got to trial.

While this investor did unusually well, arbitration often produces less spectacular but still satisfactory results for investors because of the inherent tendency of the three-member panel, free of the legal rules that bind judges and juries, to reach a compromise decision that gives the investor something. The most recent statistics indicate that more than half of all claimants in arbitration win some award. While it is usually less than the amount sought, the same may be said of most jury verdicts.

Suing your broker has never been easier. With arbitration it is fast and simple. There can be no war of attrition in which the deep-pocketed corporation, through artful court maneuvers, can outlast the customer's depleted resources or his patience. Don't be surprised if, a few years from now, your broker asks you to sign a new customer's agreement—and it doesn't contain an arbitration clause. F



Do investors make out better in court? No one knows. But their cases take more time and expense—and many don't make it to trial.